

Coiled baskets (*katoalu*) are made by women, but never for their own use. Most of them are intended as gifts to a chief or for presents at weddings, funerals, or similar occasions. The basket may be used by the recipient, but many baskets, particularly openwork baskets, seem to be put to no practical use. 285
[431]

Wooden bowls were made by men who probably were *tufunga langafale*. 322

Tongan medical treatment is a mixture of magic and herb doctoring. (See page 338.) Most of the doctors are commoners, and may be either male or female (*tangata faitoo* or *fefine faitoo*). They are not appointed by chiefs, but usually follow the practice of a parent, thus keeping the knowledge a secret within the family. Payment (*tukutoo*) is made after a cure, in the form of a feast, during which valuable articles (*koloo*, wealth) such as tapa and mats are placed in front of the doctor. The supervisor of boys was termed *faikaukau* or *faife*. (See p. 188.) 755
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While barbers, according to Mariner, might be either men or women, most of them are said to have been women. Women of chiefly rank could serve as barbers for chiefs. 305
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TITLES OF MATAPULES AND ARTISANS

The following list includes the matapule titles which I have recorded, together with the origin of each title and the relationships of the incumbents so far as known. The titles of artisans are included, though all of them may not be strictly matapule titles. (See p. 144.) 565
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Afeaki, matapule to the Tui Kanokupolu. Resides in Haapai.

Afu Haa Laufuli, a matapule of the Haa Molofaha, serving the Tui Kanokupolu; resides in Vavau. Anciently he was matapule to the Tui Haa Takalaua and had a house at Fonuamotu, Tongatabu, the residence of the Tui Haa Takalaua.

Afu Haa Mango, a matapule. Residence Okoa Island, Vavau.

Ahomee, a carpenter (*tufunga fale*) appointed by the chief Ahomee in whose *tofia* at Utui, Vavau, he lives. He was preceded in title by his father and his father's father. The present holder of the title is said to be a younger brother of the chief Ahomee.

Akauola, the *toutai* (navigator) of the king of Tonga. A member of the Haa Toutai. He is said to be of Samoan descent, the Samoan form of his title being Laauola. Akauola and Moala are related.

Angakehe, a matapule in the village of Uiha, Uiha Island, Haapai, serving the chief Malupo of that place.

Faingaa, a *toutai ika* (fisherman) of Talau, Vavau Island. Perhaps this is one of the Falefa matapules, for his partner is Mapu, as with Falefa matapules.

Fakatea, ruler of Vavau displaced by Tuituiohu, the "governor" sent there by the Tui Tonga Pau. Fakatea is said to have been only a matapule.

Fakatulolo, also called Lutui and Fokololo. A matapule of the Haa Toutai, now serving the Tui Kanokupolu, but formerly serving the Tui Haa Takalaua. The first incumbent is said to have come from the Tokelau Islands. Fokololo is the name of the garment worn by people when going into the sea. The first Fakatulolo of whom I have record was succeeded by his son Siu, who was succeeded by his daughter's son Tulcia, who was succeeded by his brother Ngongo. A Fakatulolo died August 5, 1897. [291]

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wants. Were the god complaisant to a sick person, he would be taken into Melaia's house, who would then gently massage the patient and he would recover. When people came to make supplication to the god they would wreath themselves about the neck with *ifi* (chestnut) leaves and veil themselves with white tapa. Loud talking and noise were strictly forbidden close to the god's premises in Holopeka. 776 778 782 787 [784]

Ngaohaa was also the principal deity of Fonoifua Island. The chief Taifonoifua, as well as Tui Afitu, was under the protection of this god, who manifested himself only through his priestess, a woman named Fipe. The god Ngaohaa was probably represented in the shellfish *pava*, like certain other gods who had fish or shellfish as their representatives. Pava was also the name of the house or holy place of Ngaohaa, located on the tract Tave. As usual the presence of the god became manifest by the trembling of the priestess, who was usually in a reclining position when the god entered her. Old informants who knew the last priestess said that she was an old woman. Although the deity became manifest in a priestess, he was nevertheless conceived of as a god, not a goddess. The information is not altogether clear as to whether the name Ngaohaa refers only to the god or also to the family to which the priestess Fipe belonged. This family is of *matapule* rank and some members of it are now living on Oua Island. 776 793 [825] [778] [787]

Finger sacrifices to this god were resorted to in trouble or sickness. The finger joints cut off were taken to the priestess, who pronounced the will of the god in the matter which was pending. Voyagers sailing from Haapai to Tongatabu, being delayed at Nomuka Island for weeks on account of head winds, went to Fonoifua to beseech the aid of the god Ngaohaa for favorable winds. It is said no offerings were made, but this hardly seems believable. The premises of the god on Fonoifua comprised a Tongan house of ordinary type, surrounded by a fence of living *puko* stakes such as are to be seen commonly in Tonga to-day. This fence was built and kept in repair by the Fonoifua people, who guarded it, in order that no harm might befall the priestess. The house itself was on a mound and was occupied only by the priestess. The rest of her family are said to have dwelt in other houses within the fence. 776 782 776 484 782 776 778 793 [417] [794]

A god named Uluenga (Head-covered-with-turmeric) had a house at Holopeka, Lifuka Island. The following information about Uluenga was imparted by Ana Manu of Holopeka: 776 778

The priest of the god was named Havea. The shrine (*fakafaanga*) was a basket containing three articles, namely, a throwing club, a whale's tooth, and a *paango lafo* (round portion of bottom of the coconut shell used in a game something like deck billiards). These articles were wrapped in white tapa, which was smeared with turmeric. The god had his house on the premises called Haalupo. The holy place or temple was known as Uhaimahu (Rain-in-time-of-plenty). It was not permissible for people to enter into the holy place. Also loud talking was prohibited in the god's premises. [793] [784]

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In making obeisance to the god on the occasion of some disaster, the people would place around their necks wreaths of *ifi* leaves and don white tapa on their heads. They would remain outside and make obeisance. If their purpose was the cure of a sick person, the person would be brought on a kind of litter or bier and placed outside where the people were sitting. The patient would be massaged and anointed by the priest and would recover. [757]

In the holy place were various trees. Should anyone pluck of them that person would fall down near unto death. If taken to the god, he would recover. If the carriage to the god's house was not speedy, death would result. [776, 778, 784, 753]

When the god entered into Havea, his priest, it was noticed that Havea trembled. His face changed color and he "looked dreadful." Havea had concubines who resided in the place called Manikolo. These were allotted separate periods with Havea and slept with him in pairs, one to be with him in the day time and the other to be with him in the night time. [776, 793, 782, 595]

The people said prayers to Uluenga. The god had his graveyard which was called Haa Fakana. [776, 782]

There was a god in Koulo, Lifuka, whose name was Tangakina. The name of his premises where he had a home, was Nahakalau. People prayed and made supplication to him. If persons were sick they would go to the god's place. They remained outside of his house, however, bending the body in respect. The god also had a water hole called Faatoto, which means "often blood stained." [778, 514, 778, 823]

DEITIES OF FOA ISLAND

In addition to the account of the god Tui Haa Fakafanua (p. 297), the informant Mesake Lomu of Fotua, gave me this report of another god of Foa Island:

Fakatoufifita was the god of the chief Niukapu in Fangaleounga, Foa. The people prayed to Fakatoufifita and if any person was sick, they would cut off the finger of another and take it to Fakatoufifita as an offering, which was wrapped in an unfinished piece of tapa (*fetaaki*). The patient would immediately recover. [755]

The god (priest?) lived in his house in Fangaleounga on the premises known as Fungasi. There was a sacred basket of the god's, inside of which were two objects, a whale's tooth and a parcel of turmeric. [793, 778]

DEITIES OF HAAFEVA ISLAND

Tonu and Lahe, presumably male deities, were mentioned as being associated with a well or spring which was regarded as their property. The spring is called Matahiva. [776, 778, 823]

DEITIES OF FOTUHAA ISLAND

My informant did not know the name of the patron deity of Fotuhaa, but said that the name of the tract in the bush where the priest of the god lived was Laulea. This god seems to have been besought if there was a drought, the people bringing coconuts and wreaths (*sisi*) and making kava in front of the god's house. [821, 782]

The god, while in possession of the person of the priest, drank the kava. After the kava drinking the spokesman of the people, usually a matapule, would tell the god that the island had been long without rain and that rain was desired. The god, speaking [776, 793, 787, 821]

Tapueluelu knew but little. He said that the people of the lineage Haa⁷⁷⁶ Ngata Tupu worshipped Fakailoatonga. He said that commoners of the⁵⁶⁵ lineage, as well as a great chief like Ulukalala, paid their addresses to this [613] deity. The chief Luani worshipped Tui Haa Fakafanua and the chief Tui Lakepa presumably worshipped Taliai Tupou.

Alomafao was a Samoan god whose favorite diet consisted of the inhabi-⁷⁷⁶ tants of Tonga. In a great battle with the son of a Tui Haa Takalaua this⁶⁴⁸ god was killed and in turn was eaten by the chief and his followers. The²⁶⁶ oven where he was cooked may still be seen near Utungake, Utungake Island, Vavau.

DEITIES OF NIUATOPUTAPU

The most famous deity in Niuatoputapu is Seketoa (26, p. 83), a god⁷⁷⁶ who manifests himself in the form of a fish, and according to many ac-⁸²⁵ counts is still seen to-day. It is said that Maatu, the chief of Niuatoputapu can call Seketoa when at sea (16, p. 56). Not only do natives report the appearance of the fish who is supposed to embody the god, but many white people have seen the creature. The two following accounts were given by Catholic priests. The first was written in September, 1917, by Father J. B. Mace, S. M.

At the time of my last visit to Niua Toputapu, in June last, it was my good fortune, an exceedingly rare one, to get acquainted with a Tongan divinity, a fish called Seketoa. Here is its origin.

Seketoa was a chief of Niua Toputapu, who was to become Maatu, that is king.⁷⁷⁶ On that account one of the influential families, Haaila, had conceived a mortal hatred⁸²⁵ of him, and resolved that he should not be king. Now it happened that a member of that family, Tupa by name, went out to gather shellfish, which he allowed to rot. He⁷⁷³ did that because the younger brother of Seketoa suffered from elephantiasis and an-^[169] other contagious skin disease.

One evening he rubbed his legs with the decayed shellfish and at night went on^[757] to the hut where Seketoa slept. Seketoa awoke and thought it was his brother who had entered. So he said, "Why have you come to me? Do you not know that your disease is contagious? And would you communicate it to me?" But the other, who was armed with an iron-wood lance, made no answer, but pierced Seketoa through and fled. Seketoa rose, but was unable to extract the wood which had broken close to the wound. He therefore went to the neighboring hut where the women were and asked them to bring out a light. He was then able to draw out the end of the lance.

Then, having called his brother to him, the very one who was infected with the contagious disease, he said to him: "My will is that you become king of this island; as for me, I shall go to the sea to succor my brothers in distress." And at his bidding he was wrapped over in coconut leaves and cast into the sea.

The brother of Seketoa became Maatu, that is king of Niua. He communicated his^[553] disease to his subjects. And since that time a large proportion of the people are^[169] afflicted with elephantiasis and other skin diseases.

After being cast into the sea, Seketoa transformed himself into a fish whose color and dimensions it is impossible to determine. His peculiarity lies precisely in this, that he assumes an infinite variety of sizes and colors, sometimes suddenly. The mark by which he is recognized is the scar he bears in his side. Sometimes, though seldom,

Some forms of illness, called to-day *taitoo fakatevolo*, are believed to be caused by a god or spirit entering the body of a person and thus making him ill. Special medicines and cabalistic signs made with the hands are employed today to dislodge such an unwelcome tenant. Another belief of the present time is that certain illness is caused by the god or spirit biting the sick person. Such an afflicted individual may say, "Nae tai au ehe tevolo" (The devil has bitten me). I have heard it said that sometimes the discomfort caused by over-indulgence in liquor is attributed to a divine visitation.

Middle age is the most popular period of life at which a person becomes a medium for a god or spirit, although sometimes the deities and spirits manifest themselves through younger men and women, but never through children. Anciently, the god manifested himself through the successor of a priest, but only after the death of the old priest. Usually priesthood passed from father to son, but sometimes the deity or spirit entered some other person unexpectedly. That person would inform the Tui Tonga of the fact and would then be appointed to the priesthood. The priest of Pulotu Katoa was always appointed by the Tui Tonga, and presumably some other priests were too, although it is not unlikely that many were appointed by the chiefs of the families or lineages for whom they officiated. The priests of Tonga did not form an association or brotherhood, as each seems to have worked independently of his colleagues. This state of affairs is attested by the absence of organized resistance to Christianity. The Tui Tonga was declared emphatically by all informants, including Rose Fatafehi, son's daughter of the Tui Tonga Laufilitonga, not to be a priest, in spite of the statement of certain early writers to the effect that he was the high priest of Tonga. My informants pointed out that the Tui Tonga did appoint priests to represent the gods and especially the priests of Pulotu Katoa, but that he himself was no priest.

Though the informant Tamale thought that the term *toumama* applied only to priestesses and that *taula* applied to priests, there seem to be no data to substantiate his opinion. Another informant said that the stem *mama* refers to the will of the god. This same informant gave another term for priest, namely, *fakahaaleanga*. No other informant, however, gave this term and it may be therefore another rare synonym for *taula otua*. Ana Manu of Haapai gave the term *fakafofonga* (representative) for priestess.

Each lineage seems to have had a deity with a presiding priest who had ⁷⁷⁸ in charge the *fakafaanga* or precious and sacred possessions of its god. ⁷⁹³ Part of the *fakafaanga* were fine mats which constituted a form of wealth. ⁶¹³ One mat in particular was kept folded and on the occasion of the appearance of the god was spread out for him to rest upon. This mat was treated virtually as a shrine. It might not be disposed of under pain of death at ⁶⁸⁸

The following translation of an old text refers to the destiny of souls 775 in ancient times, but without reference to rank:

It was said by the people in olden times, that when this body died it [evidently the soul and not the physical body is meant] went at once to Pulotu. When they [the souls] got there, Hikuleo (the ruler of Pulotu) chose some as posts for his fence, and some as supports for the log on which tapa is made, and some were taken as posts for the gate of Hikuleo's fence, etc."

Souls in Pulotu were thought to have earthly appearance though they are only shadows. The souls or spirits of chiefs (including the Tui Tonga) were thought to go to Pulotu, identified with the Underworld (Lolofonua) by some modern Tongans. The soul of a commoner was supposed to appear 775 as an insect on a tapa or mat specially spread after the burial. The tapa 825 was spread in the house where the commoner died and the watchers sat 565 about until an insect appeared thereon, when the mat was carefully folded and tied near the ceiling of the house and never again examined. This appearance of the soul of the deceased was called *fakahaale laumalie*. The souls of chiefs never appeared in insect or other animal form.

Now and then the soul of a very great man might manifest itself 775 through a priest. Ideas about reincarnation of the deceased were rare, though a story is told of a dying man who told his weeping children that he would return as a white man to care for them. Another account relates that a woman's soul, incarnate in a rat, came to visit her child. Another 825 woman's soul was said to be incarnate in a large lizard (26, p. 108). Normally, only the gods, and not the souls of men, became incarnate, in animals. The souls or spirits of men might return to this earth, however, as indicated in a narrative and poem recorded by Collocott (16, p. 96).

The term for ghosts (*faahikhe*)—also applied to the gods, to the soul, 774 and (or) the spirit—is a generic term for spiritual beings and means lit- 775 erally "different side or different half of anything divided" (in contrast to 776 human beings). Baker defines *faahikehe* as "the name for all the Tonga 196 gods; an evil spirit." One informant likened a *faahikehe* to an image in a mirror, describing it as something seen but incapable of being grasped. One informant gave the word *otua* (god) as an occasional term for ghost. The 793 word *faahikehe* is also applied to the priest, apparently when possessed by 787 the god. This usage prevailed in Mariner's time (41, vol. 2, p. 80), as well as to-day.

Some sickness is believed to be due to possession by a ghost. The treat- 775 ment is to drink an infusion of certain leaves called *lautolu* and to have the 753 infusion massaged on the body as well. When the ghost is thus driven out 787 the patient cries bitterly, "because sorry to part with the ghost." The 755 infusion may be used as a prophylactic against possession. 757

sees many things in a muddled dream they do not come true. The period that elapses between a dream and its fulfilment is variable—it may be a week or it may be several months.

A sickness called *fafanga*, which is manifested by a "bad stomach" and results in "doubling up" or even death, is caused by dreaming that a man comes and feeds the dreamer pork, fowl, and other rich food.

A sickness called *takini*, painful urination, is believed to be caused by the frequent dreaming of sexual intercourse. The belief is that the visitant of the dreamer is a spirit (*tevolo*).

MAGIC

Most of the extant magical practices are to be found in the formulas of the *faitoo* (doctors). Material presented here includes odds and ends of magical practices not largely concerned with curing. Malevolent magic is still practiced. Spoken words were believed to be effective too. Thus the term *talatukii* means to curse, to use imprecations so deadly and horrible, that the person against whom they were directed usually died from the effect.

Any medicine man or woman was called *faitoo*. The house of a *faitoo* was called *falehangatamaki*. One informant said that this house was only that of a *faitoo* who treated boils and skin eruptions, and this statement is probably correct, as *hangatamaki* means any sickness or disease appearing upon the surface of the body. When confronted with a sickness about whose diagnosis he was in doubt, a *faitoo* passed his hands over the diseased part, repeating a formula which named every possible disease known and directed the medicine to cure any one or all of them. (See p. 343.)

When collecting the bark of the *tava* and *siale* (*Gardenia*) for medicine the collector always observes which part is towards the setting sun and collects the bark from that side. It is believed to be particularly efficacious, though no reason was given.

One informant stated that his father had buried his umbilical cord and planted a coconut over it. As the tree flourished, so would the individual. I could get no corroboration of this as a practice. No other account of tree planting was obtained. Possibly fear that the tree might be killed and the person suffer make people reticent.

The story of the turtle Sangone mentions the magical stopping of growth and retention of childhood by striking a child on the top of the head (26, p. 50).

When a child's milk tooth is extracted it is thrown on the roof of a house, so that the second tooth will grow quickly. At the same time this rhyme is said:

Hinehina matailaila
Omai hoo nifo kovi mooku
Kae o atu hoo nifo telei moou.

White with spots
Give me your bad tooth
But have a good tooth for yourself.

That there is a ceremonial or lucky number in Tonga I did not definitely ascertain. That there was, or is, such a number seems likely and it may

128 the general history of human science, but be-
 755 cause, in all early stages of society, it appears
 782 to have a particular connexion with, and often
 to depend entirely upon, certain religious cere-
 monies; nor is this to be wondered at, for, see-
 ing that the operations of the animal œconomy
 are so far involved in mystery, as frequently to
 escape the scrutinizing search of the most cul-
 tivated mind, how can it be otherwise but that
 a people, among whom the sources of know-
 ledge are scanty, and the opportunities of expe-
 riment on the animal œconomy both rare and
 hazardous, should look to the gods for relief
 from those miseries which evidently proceed
 from an unseen hand: a considerable portion
 of the curative means of these people are,
 therefore, very naturally, *intocation* and *sacri-*
 752 *fice*. Nevertheless, as the animal œconomy is
 subject to a variety of accidents, the causes and
 operations of which take place, and pursue their
 progress, more or less, under the evidence of
 the external senses, appropriate means of cure
 are frequently had recourse to, and operative
 surgery is therefore not in a contemptible state
 of cultivation.

751 All the remedies practised among them may
 782 very safely be ranked under these three heads,
 755 viz. invocation, sacrifice, and external opera-
 752 tions: as to internal remedies, they sometimes,

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but very seldom, use infusions of a few plants, 757
which produce, however, no sensible effect, 782
either upon the system or upon the disease, 755
and we may readily conceive in how little 752
esteem such remedies are held when the king's
daughter, whose life so great pains were taken
to preserve, took none of them, nor did any one
think of proposing them. The idea of giving 777
these infusions was first taken from the natives
of the Fiji islands, who have the repute of
being skilful in the management of internal re-
medies: and though almost all the surgical
operations known and practised at the Tonga
islands have avowedly been borrowed from the
same source, and followed up with a consider-
able degree of skill and success, yet the Tonga
people have generally failed in the former, and
for the cure of constitutional ailments depend
upon the mercy of the gods, without any inter-
ference on their own parts, except in the way
of invocation and sacrifice. In such a state of 755
things, it would be natural to suppose that they
frequently make use of charms, amulets, &c. to
assist in the cure; but this, however, is never
done, for they have not the most distant idea
of this sort of superstition, which prevails so
much over almost all the world, even in the
most civilized countries. The natives of the 757
Sandwich islands, however, appear to have a 771

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757 knowledge of some medicines, but whether from
171 original discoveries of their own, or from the
721 information of Europeans, Mr. Mariner could
not obtain any information from those natives
who were with him at Vavaoo. One of these
Sandwich islanders (a petty chief) professed
some knowledge of the healing art, and it so
happened that Mr. Mariner was once the sub-
ject of his skill. Feeling himself much indis-
posed by a disordered state of the stomach and
bowels, attended with head-ache and drowsi-
ness, this Sandwich islander proposed to give
him some internal remedies, whilst a native of
Tonga, on the other hand, very much wanted
him to lose some blood (by scarification with
shells on the arms, legs, &c.) The remedies
proposed by the former were an emetic and a
cathartic: the cathartic consisted chiefly of the
sweet potatoe grated, and the juice of the sugar-
cane; to this, however, was added the juice of
some other vegetable substance, with which
Mr. Mariner was not acquainted. The emetic
consisted of two infusions, one of certain
leaves, and the other of a particular root, both
unknown to him: the Sandwich islander in-
formed him that the root was necessary to
counteract the effect of the leaves, which was
very powerful, and might, in a large dose, and
without such addition, kill him. Upon this

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discouraging information, the native of Tonga, 757
with his scarifying shells, redoubled his per- 771
suasions, ridiculed the remedies of the other, 772
and, on understanding what effect they would
have, laughed most heartily at the idea of
curing a sick man by means which would make
a healthy man sick. The remedies of the sur-
geon, however, were not more agreeable than
those of the physician, and the patient was at a
loss to know to whose care he should entrust
his health; when the latter signified his inten-
tion of taking some of his own physic, which
was the best proof he could possibly give of his
confidence in it: two equal doses were accord-
ingly prepared; the patient took one, and the
doctor took the other. The cathartic was first
given, and the emetic about an hour after-
wards: the latter operated in about another
hour, and the former, in conjunction with it, in
about two hours and a half. They both evinced
abundant evidence of their respective proper-
ties, and the following morning Mr. Mariner
found himself perfectly well: which happy re-
sult the man who wanted to bleed him could
by no means attribute to the remedies he had
taken! The Sandwich islander, notwithstand-
ing he was much laughed at, particularly about
his cathartics, obtained at length a considerable
share of credit for his skill. Finow took his

757 remedies twice with very good effect, which
 171 encouraged some others to try; but as these
 727 circumstances took place only a short time before Mr. Mariner left, and consequently only a few trials had been made, we ought not to speak of them as constituting the medical knowledge of the Tonga people; but as this Sandwich island chief was a man of considerable judgment, and, as Mr. Mariner has every reason to think, a good observer, we indulge the hope that no ill success, at an early period, has destroyed confidence in the adoption of two such useful remedies.

755 The ceremonies of invocation in behalf of
 782 sick people have already been described in the account of the sickness of the late king's daughter: the sacrifices adopted on similar occasions are *tootooni'ma* and *naugia*; cutting off fingers and strangling children: these also have both been described; the latter is only done for very
 128 great chiefs. We shall now proceed to speak of their operative surgery, and constitutional diseases, as far as Mr. Mariner's observation can lead him to speak with accuracy.

752 No native of Tonga undertakes to practise
 177 surgery unless he has been at the Fiji islands, where constant wars afford great opportunities of becoming skilful; and no native of Tonga would employ a surgeon who had not been

752 smoothly folded several times, and anointed with
cocoa-nut oil, as a pledget to keep open the

● [757] wound. He ordered his patient to be kept
perfectly quiet, not to be spoken to, no noise to
be made, nor his attention to be attracted in
any way: to live chiefly upon vegetable diet,
or if he had any kind of meat, fowl in prefer-
ence to pork, or if pork, it was to be very small
in quantity, and without the least fat, with
cocoa-nut milk for drink, in any quantity that
he felt disposed to take. The first night he had
a great deal of pain, much thirst, and little
sleep; the following day he was much easier, a
great deal of blood was found to have been dis-
charged, and a fresh pledget was introduced,
which was renewed every morning as long as
any discharge was apparent. When the dis-
charge of sanguineous fluid ceased, which was
in about nine or ten days, the operator intro-
duced his probe, to be sure that the cessation
of the discharge was not occasioned by any ob-
struction: he then contented himself with a
more superficial pledget, that the external ori-
fice might not heal too soon; and the patient
was allowed to change his posture occasionally,

752 but not for a long time together. As he grew
757 better a little more meat was allowed him; but
the use of cava was interdicted until he got
tolerably well. The wound healed in about six

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weeks, without any sort of dressing or washing; 752
 the patient was confined to his house about two 757
 months, and was not perfectly recovered till
 near a twelvemonth, when he seemed as healthy
 and as strong as ever, with scarcely any cough
 having supervened in the meanwhile. This was
 considered a very dangerous wound, and a very
 well conducted cure. Mr. Mariner does not 826
 know that they are acquainted either with the
 exact situation or existence of the intercostal
 arteries.

It often happens that the arrow, not being a 752
 barbed one, is withdrawn without any difficulty;
 but still the surgeon thinks proper to perform
 the operation of *cawso*, not by enlarging the
 wound made by the arrow, but by making an-
 other at some little distance from it, in a part
 which, either from judgment or education, he
 deems more safe and proper. In all those per-
 sons whom Mr. Mariner knew to have under-
 gone the *cawso* it had been performed in nearly
 the same situation as the one above stated.

We have observed in the before-mentioned 752
 case that the wound was not washed, and it 757
 may here be noticed, that in all cases of con- 515
 siderable wounds produced by pointed instru- 753
 ments the patient is not allowed to wash himself 302
 till he is tolerably well recovered, nor to shave,
 cut his hair, nor his nails: for all these things

752 they say are liable to produce *gita* (tetanus),
 751 unless the wound be of such a nature, and in
 515 such a situation, that it may with safety be first
 753 laid completely open, then there is no danger.
 [302] Mr. Mariner never witnessed a case of tetanus
 [164] produced by these means; but he met with
 many who said they had seen it in persons who
 had got nearly well of their wounds, but hap-
 pening to wash themselves too soon, spasm su-
 pervened, and death was the consequence. They
 752 notice that wounds in the extremities, parti-
 753 cularly in the feet and hands, are liable to pro-
 duce tetanus: also, in persons already wounded,
 sudden alarms, or even any sudden noise that
 calls the attention abruptly, is liable to produce
 this complaint. They never allow females to
 be near men thus wounded, lest the mere stim-
 ulus of venereal desire should induce this
 752 dangerous complaint. As to cutting the hair
 751 and nails, they positively assert that the mere
 302 sensation of these simple and common opera-
 753 tions has not unfrequently been productive of
 [515] these dreadful consequences. The man whose
 case we have just mentioned was eight months
 without being washed, shaved, or having his
 hair or nails cut.

752 *Gita* is a disease very common among the
 177 Tonga people; but still more common among
 164 the natives of the Fiji islands, who, from their

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when he happened to take cava, which produced a temporary insanity. Fractures of the clavicle and ribs Mr. Mariner never saw there. ¹⁶⁴ [752] [158]

The most common surgical operation among them is what they call *tafa*, which is topical blood-letting, and is performed by making, with a shell, incisions in the skin to the extent of about half an inch in various parts of the body, particularly in the lumbar region and extremities, for the relief of pains, lassitude, &c.; also for inflamed tumours they never fail to promote a flow of blood from the part; by the same means they open abscesses, and press out the purulent matter: in cases of hard indolent tumours, they either apply ignited *tapa*, or hot bread-fruit repeatedly, so as to blister the part; and ultimately to produce a purulent surface. Ill-conditioned ulcers, particularly in those persons whose constitutions incline to such things, are scarified by shells; those that seem disposed to heal are allowed to take their course without any application. ⁷⁵⁷

In cases of sprains, the affected part is rubbed with a mixture of oil and water, the friction being always continued in one direction, that is to say, from the smaller towards the larger branches of the vessels. Friction, with the dry hand, is also often used in similar and other cases, for the purpose of relieving pain. ⁷⁵²

751 In respect to inflammations of the eyes, which sometimes rise to a very great height, attended frequently with a considerable purulent discharge; they frequently have recourse to scarification by the application of a particular kind of grass, the minute spicula with which it is replete dividing the inflamed vessels as it is moved upon the tunica adnata. To assist in reducing ophthalmic inflammations, they also drop into the eye an acid vegetable juice, and sometimes another of a bitter quality; the first is called *vi*, the latter *bawlo*. The species of 164 ophthalmia to which they are subject, though sometimes lingering, is stated scarcely ever to have produced serious consequences, and is not considered contagious. Mr. Mariner neither saw nor heard of but one man who had lost his sight by disease.

752 In cases of gunshot wounds, their main object is to lay the wound open, if it can be done with safety in respect of the larger blood-vessels and tendons, not only for the extraction of the ball, if it should still remain, but for the purpose of converting a fistulous into an open wound, that it may thereby heal sooner and better: if they have to cut down near larger vessels, they use bamboo in preference to the shell; the same near tendons, that there may be less chance of injuring them. They always

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months, and sometimes a couple of years. From the symptoms thus far described, there is not much doubt about its resemblance to what is called the *yaws*; the remedies they use for it are a certain bitter juice dropped into the ulcers, and rubbing off the fungous excrescences with cocoa-nut husk dipped in sea-water. They are subject also to a pustulous eruption, chiefly confined to the feet, but which sometimes affects the hands: it usually appears between the toes, and has in its external character a strong resemblance to psora, and itches very much: it appears in the form of small pustules with whitish heads, which, when rubbed off, generally discharge a watery fluid: it is supposed to arise from walking in clayey places without the opportunity of washing the feet afterwards: it is not thought to be contagious: it usually lasts about four or five days. The name they give it is *gnówooa*. They use no remedy.

They are also subject to a disease called *fooa*: but if we describe the symptoms of elephantiasis, we shall have related with tolerable accuracy the history of this disorder. Labillardiere notices the disease, and calls it elephantiasis. They use no remedy for it.

The disease called *momóco*, a sort of Marasmus, usually lasts from four to seven months:

164 in the latter stages it somewhat resembles
 165 phthisis. It comes on with occasional chilliness,
 loss of appetite, lowness of spirits, wasting of the
 flesh: shortly succeed swellings in the groin
 and axillæ; general debility, paleness of the
 lips. As the disease advances the patient stoops
 very much; experiences pain in the chest, and
 across the shoulders: sometimes, but not often,
 a cough, and expectoration now supervene, the
 debility and emaciation become extreme, and
 death relieves the patient from his sufferings:
 these are all the symptoms which Mr. Mariner
 [757] can speak of with certainty. They use no phy-
 sical remedies.

164 *Féke-féke* appears to be a sort of mild irregu-
 lar intermittent: the paroxysm usually lasts from
 two to eight hours, and consists of a cold and a
 hot stage; but is seldom succeeded by per-
 spiration. The returns of the paroxysm are
 very uncertain; sometimes two, at other times
 three, four, five or more days intervene. The
 patient is sometimes perfectly well for a month,
 and then his disorder returns.

123 In regard to diseases properly belonging to
 females, Mr. Mariner has very little to commu-
 841 nicate. The women are in general tolerably
 844 healthy: during the catamenia, they anoint
 751 themselves all over with a mixture of oil and
 turmeric, to avoid catching cold; and they do

512 proposed, they retire to rest at sun-set, after
 513 bathing and oiling themselves, and even on
 372 these occasions the houses are lighted up with
 357 torches, during two, three, or four hours after
 dark: these torches are held by female domes-
 572 tics. It cannot be strictly said that they have
 any fixed times for meals, though it generally
 [264] happens to be in the morning, about noon, and
 [431] again in the evening; but it depends greatly
 [565] upon how the chiefs are occupied, or what pre-
 [562] sents have been made to them: it frequently
 [609] occurs that several presents come at the same
 time from different quarters; then they have a
 feast: but whatever they have, whether much
 or little, it is always shared out to all present,
 each having a portion according to his rank:
 strangers and females generally obtain some-
 what more than is due to their rank. Those
 who get more than they want never fail to sup-
 ply others who have not enough: selfishness is
 a very rare quality among them: if a man has
 a piece of yam, though it be not enough for a
 meal, he will readily give half away to any one
 who may want it; and if any body else comes
 afterwards in like need, with the greatest good
 nature he will give half the remainder; scarcely
 saving himself any, though he may be very
 hungry.

757 If during the day a chief, mataboole, or
 565 mooa, but particularly a chief, finds himself fa-

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tigued with walking, or any other exercise, he lies down, and some of his attendants come and perform one of the three following operations upon him, viz. *toogi-toogi*, *mili*, or *fota*, i. e. being gently beaten upon, or having the skin rubbed, or having it compressed: these several operations are generally performed about the feet and legs; the first by constant and gentle beating with the fist; the second by rubbing with the palm of the hand; and the last by compressing or grasping the integuments with the fingers and thumb. They all serve to relieve pain, general lassitude, and fatigue; they are mostly performed by the wives or female domestics of the party; and it is certain that they give very great ease, producing a soothing effect upon the system, and lulling to sleep. Headach is found to be greatly relieved by compressing the skin of the forehead and the scalp in general. Sometimes, when a man is much fatigued, he will lie on the ground whilst three or four little children trample upon him all over; and the relief given by this operation is very great.

Such is the history of the politics, religion, and knowledge,—and the manners, customs, and habits of the people of the Tonga islands; and all that remains now to be done is to furnish an account of their language: for this pur-

Collocott and Havea—Tongan Proverbs 125

480. **Tala tae fai tuunga:** Talk without making standing place, 539
that is, to report something without adducing grounds of belief. 829

481. **Tala tae fakaejia:** Talk without putting a handle to it, that
is, to tell something without adducing any proof or grounds of
belief. 521

Baker understands the "handle" to one's talk to refer to appropriate action following on words, and translates the phrase, "To say and do not; to say one thing but do the contrary." The expression probably lent itself to both uses.

482. **Tauange mo koe:** I sincerely desire of you. 539
This is hardly a proverbial expression but is freely used in earnest 521
entreaty.

483. **Vale tala vale:** Fool telling fool; one fool upbraiding
another for his folly.

Used like similar expressions in English. (See No. 427.)

483a. **Oku longo a Tonga:** Tonga is silent.

Tongans are not in the habit of talking while eating and so this phrase is applied jocularly to a party of Tongans sitting silent at a meal. [264]
It is said to have been first applied by Fijians.

DISEASE AND MEDICINE

484. **Avanga kai ate:** Possession (by a spirit) consuming liver. 539
The liver is reckoned the seat of life and of at least some of the 826
passions. The term *avanga* is applied to those illnesses which are caused 753
by demonic possessions. Proverbially this phrase is applied to the yearning 787
and distress of intense love. [832]

It is worthy of note that in ceremonies the liver of a slaughtered pig 627
is taken and presented to the chief. This is stated to be a presentation to 825
the chief of the whole of the pig's life. (See also No. 485.)

485. **Kuo toona hoku ate:** My liver is baked. 539
This indicates distress. My life is consumed, wasted away. 826

486. **Foki mei he uhi:** Returning from the *uhi*. 539
Restoration to health from an apparently hopeless sickness. The *uhi* 757
(*Evodia hortensis*) is largely used in native medicine, so largely that it [137]
perhaps stands here as the type of a drug which will be tried without much
expectation of its proving efficacious when the practitioners are at their wit's
end.

539 487. Hange ha inu vai tulotula: Like drinking *tulotula* medicine.
278 This particular member of the Tongan pharmacopoeia has no pro-
272 nounced or unpleasant taste and one may drink it like water. Probably the
273 drugs that enter into its composition are not very strong and they do not
produce very marked effects. Used of one who drinks large quantities of
liquids like kava or spirits without showing any effects.

539 488. Hange ha kainiloto: Like a *kainiloto*.
164 *Kainiloto* is an ulcerous or cancerous affection of the throat and nose
577 whose nature is indicated by its name, which means eating inside. The
disease has already committed serious ravages in the interior of the body
before it becomes apparent on the surface. The phrase is applied to an evil
which is hidden at first and only shows up when it has reached a very
serious stage and is extremely difficult to cope with.

539 489. He oku ai ha hui kape loto: For is there a bone (needle) to
826 pick out (what is in the) heart?
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If one gets a splinter, for instance, in any external part of the body he
can easily pick it out with a needle; but there is no needle that can pick out
the secrets in the heart.

539 490. Kovi jiko ngaui: To evacuate the bowels moving about is
514 bad.

758 This is applied to a sick man, who, instead of lying down patiently
and taking the care that his ill health demands, wants to be up and at work.
His unwisdom is parallel to that of the man who should try to walk about
while performing a function that is obviously inconsistent with walking
exercise.

539 491. Mahaki fakapopo fala: Sickness rotting mat.

758 Refers to very protracted illness in which the patient is lying down
so long that it might be said that his bed mats are rotting under him.

539 492. Malumalu talavai: Shady (for) getting medicine.

757 Probably a late phrase, dating from the establishment of the mission
484 stations and of Government hospitals with their dispensaries. Such dis-
368 pensaries are naturally in the larger villages and people often travel a con-
siderable distance to reach them. The phrase indicates the cool of the late
afternoon suitable for the journey to a village where a dispensary stands.

539 493. Mangu bea lau: Scab and touching with the fingers, that is,
758 picking the scab from a sore.

183 Making a bad thing worse by meddling.

539 494. Papanga eiki: Level chiefs.

164 *Papanga* means to be disfigured by having the nose eaten away by a
554 kind of ulceration not very uncommon in these islands. If the nose is gone
565 the face is level, there is no boldly jutting out feature left. So of a gather-

463 three master-fishermen; three other fishing-experts; three experts in medicine. Excepting cases where one individual may be an expert in more than one activity, this gives a total of fifteen different experts, of whom two in medicine are women, the rest being men.¹¹

In some of these activities men other than the experts often claim enough skill to carry them on at a lower than expert level of efficiency. Thus many Pangai men can put up with some degree of neatness a small Tongan-style house. If [342] on the other hand, one wanted to build a large Tongan house, [335] complete with ornamental lashings and finished to the last detail, then the services of the recognized village expert would be necessary. Again, many doctor themselves for [757] small pains and aches. Should pain become acute or not [759] readily yield to simple treatment, then one of the recognized experts will be called in.¹² Finally, a man may fish with [226] success indifferent or otherwise, according to what skill, luck, or knowledge he possesses. Should it be desired however, to carry out a large communal fishing expedition, then it would be absolutely imperative to place the direction of such an expedition in the competent hands of one of the master-fishermen.

The varied skills of these experts and the compensations they receive for their services are mentioned elsewhere in the consideration of specific economic activities.

PLANTING AND CULTIVATION

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Clearing of land to be used for gardens may be done at any time of the year. A suitable area is selected, due consideration being given to exposure to sun, shelter from prevailing winds, and relative nearness to the formed bush-tracks that lead back to the village. The trees and undergrowth are cut down and thrown to one side. When dry they may be burnt and the ashes scattered over the cleared

¹¹ Gifford (*Tongan Society*, pp. 143-146) mentions the names and duties of still other artisans who are not apparently represented today among the men of Pangai village.

[656] ¹² Native medical treatment is forbidden by law but is practised everywhere, even in villages that have easy access to Government medical service.

13: Beaglehole & Beaglehole E-5 (1938-1939) 1941
 OU9 Tonga OU9
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 Pangai

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goods (used for making the *vala*, dresses, etc.), shirts and vests are vitally important in order to conserve what might be called a decency-status in village life.¹⁴ Soap and blue are similarly necessary to keep both clothing and the person reasonably clean. Tobacco for the villager is more than a luxury, specially when alcoholic liquor is practically unobtainable. Reels of cotton, though costing relatively little, play a vital part in clothes-repairing. Lastly, teething-powders, which account for almost one quarter of the expenditure on the items with which it is grouped in the table above (one per cent. also out of total store expenditures), perform the incredibly useful function of keeping teething infants from wailing wretchedly day and night and thus preserve a sufficient measure of quiet for adults to sleep. (Expert medical opinion in Tonga suggests that the frequent use of these teething-powders, which generally contain a large measure of powerful drugs, is one not unimportant contributory factor in a high infant mortality among the villagers. But it is hard to convince a Tongan of this fact; all the more so in that adults, children, and infants all share the same floor at night and the frustrations imposed upon one who would sleep by the wailing of a toothache-racked child can always be relieved by administering teething powders to the infant.)

The percentage-distribution of sales as set forth in this table refers only to one of the two stores in the village. There is no reason to think that the general percentages and proportions would be materially altered were it also possible to include sales from the second store in the village and also sales made to villagers from the several stores in nearby Neiafu.

Although some few men in the village obviously have a greater yearly income of money than the majority, there are as yet few signs of any tendency to reckon social prestige in terms of wealth-accumulation. The village overseer, the

¹⁴ By Tongan law, rigidly enforced, men and women (both Tongan and white) must cover with clothing upper and lower parts of the body. Considerable ingenuity is exercised by those pleading before Tongan courts in order to determine what constitutes for men an upper garment that infringes neither law nor decency. Apparently a necklace does not constitute an upper garment but a shirt collar with hardly more than a tatter of shirt hanging precariously to the collar, is considered to be well within the law!

765 served to all the mourners. This again is most unusual
858 for a funeral-feast, which should be a large quantity of oven-
594 baked food including the inevitable pig. However, the village
276 overseer had suggested that because the deceased was an
766 infant and because he had died two days after Christmas and
thus in the middle of the holiday-making time, it would be
advisable not to trouble with an oven. The parents, being
poor, were only too glad to acquiesce in such advice. The
mourners disbanded about midday. There was no ten-day
mourning period.

766 This account emphasizes the somewhat casual fashion
858 in which an immature infant may be buried as compared
with the burial of an important adult. It must be remem-
bered, however, that the family of the dead child had
apparent right to be more casual than most village families
would have been in similar circumstances. This was their
fourth infant dead. None of the remaining children in this
family looked the picture of anything except ill-health and
hence the parents could probably expect further deaths
among their offspring. It is most likely, however, that little
of this casualness would be evident if death had happened to
take the first-born and favourite son of affectionate parents.
761 Presumably like most people everywhere, the villagers infuse
152 dynamic quality into the observance of custom according to
the strength of attitude and feeling that they experience.
765 Where death is not unexpected, or where family status is not
554 at stake, mourning may become casual. Where it is un-
expected, or where deep affection is involved, or where family
status is at test, then observance of custom becomes charged
with all the emotional quality of deeply-felt experience.

MEDICINE

757 For most of his aches, pains, and sicknesses the villager
759 prefers treatment from one of the recognized experts in the
village. He consents to treatment from the white doctor
743 only if his trouble obstinately refuses to yield to Tongan
777 types of cure, and some friend or relative, more sceptical of
Tongan medicine, can persuade him to visit the hospital in
Neiafu. In general, however, the villager probably feels
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13: Beaglehole & Beaglehole E-5 (1938-1939) 1941
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Vavau
Pangai

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that many types of sickness are due to ghostly visitants.²⁰ To deal with these ghosts, Tongan methods are more likely to bring about cures than the white man's science. The following treatments were compiled for us by one of the village medicine-men. They are given here, not as a complete survey of the village medical knowledge, but as indicating the sort of techniques that medicine men use in their day to day practice in the village.

Headache: There are two main types of treatment:

(a) Massage the head with a mixture of six *uhi* leaves crushed and mixed with coconut-oil; observe also the following rules: keep the head covered, do not go out in the wind, keep away from the sun and the sea; (b) Stamp on the ground three times; then place the feet on a mat and stamp again. Repeat this procedure five times in succession. This treatment is advisable if it is thought that the headache is caused by a ghost. The ghost is likely to drop from the body with the repeated shaking.

Earache: If the earache appears to be caused by an abscess or inflammation, massage the region of the ear gently with six *nonu* leaves. On the other hand, should there be no signs of external irritation, then dip the finger in coconut-oil and poke the oil deep into the ear.

Mouthache: Spread coconut-oil over the back of the mouth and palate, then rinse out the mouth three times with water.

Toothache: (a) Smear coconut-oil on the cheek in the region of the aching tooth; (b) Place a small piece of Tongan tobacco on the aching tooth; (c) Take scrapings from the bark of the *angoango* tree, strain them through the stipule of the coconut-tree and drink the liquid; (d) Collect twenty-four *takafulu* leaves, pound them and drink the resulting juice.

Sore eyes: Take six *hulala* leaves, pound them, then dip a piece of bark cloth into the liquid and squeeze out into the sore eye.

²⁰ Notes on the conceptual basis of Tongan disease are given in a short paper by Collocott, "Sickness, Ghosts and Medicine in Tonga," *Journal of the Polynesian Society*, 32 (1923) 136-142.

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824 *Stomach-achs:* (a) To the liquid from twelve pounded *nonu* leaves add three drops of coconut-oil, strain through coconut-stipule and drink with water; (b) Mix scrapings from the bark of the *mohokia* tree and of the *kea* bread-fruit tree with water, and drink; (c) For a laxative, add water to the scraped bark of the *fa'efa'elunga* tree and drink; (d) Massage the abdomen with four leaves from the fig-tree.

Boils: (a) Crush bark scrapings from the *nonu* tree and smear on the inflamed area after mixing with crushed *koka* leaves; (b) For spots on a baby's skin, pound or chew the leaves of the *fekika* tree, mix with water. Dip coconut-stipule in this liquid and squeeze the liquid into the baby's mouth.

Coughs: Scrape the bark of the *toa* tree or the *tava* tree, add water to the scrapings and drink the liquid.

[752] *Cuts:* (a) Take the husk of the immature green coconut, heat it until it is warm, then squeeze out drops of liquid from the husk over the cut; (b) Crush the bark of the *fale* tree or the leaves of the *tamatama* tree, dip a piece of bark cloth in this juice and squeeze over the cut.

752 *Broken bones:* Apply a splint made from a section of the sheath of the coconut-tree to the broken limb and bathe the fracture night and morning with hot water.

757 *"Body-breaks":* Whenever there is pain in the upper part of the body, in the chest, lungs or back for instance, this pain is attributed to an obscure internal "breakage" in the body. Treatment: Add two drops of coconut-oil to some hot water and massage the seat of the pain with this liquid. In addition, mix the scraped bark of the *lekileki* tree with water and drink night and morning immediately after the massage is finished. For a backache, standing on one foot several times each day is also recommended.

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759 The remedies just given are the secret recipes of one medicine-man only. Other experts have their own variations on these fundamental techniques of herbal and massage-treatment. The sick person will consult the experts in succession until one or other provides the treatment that effects the cure. It is of considerable advantage to the expert to know the acts likely to have caused the sickness,

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even though this knowledge is used only for diagnosis and not specifically for treatment. Thus Sane, our housegirl, came to us one morning suffering from pronounced and painful swellings of the hand and arm. Everyone was greatly mystified by these swellings until it was remembered that on the day before, Sane had been gathering wild flowers in the village cemetery. She had noticed us on a nearby beach and had shouted and cried out to attract our attention. This noise had both disturbed, and been highly disrespectful to, the ghosts of the cemetery-dead. They had retaliated by sending swellings to Sane's arm and hand. The swellings disappeared in a day or so, but had Sane consulted a medicine man, the treatment would have been a course of massage. We have no record of any method of laying village ghosts by disturbing or rearranging the bones of a suspected troublesome corpse—a method noted by Collocott.

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Many of the villagers are not averse to a consultation with the white doctor provided they do not have to make a two-hour trip to the hospital for this purpose, and provided, too, they are not necessarily expected to carry out the white man's treatment, especially if this treatment is surgical. They do not mind swallowing such medicines as aspirin or sodium phosphate; in fact, they rather welcome the opportunity to do this since the taking of such drugs rather increases their prestige in the community by giving them something of endless interest to talk about with their friends. Fear of the hospitalization and surgery which their government provides for them at no cost is partly a fear based on the novel and new-fangled, partly a fear based on the knowledge that in the past hospitalization has often been equivalent to a death sentence. This latter fear is very real among the villagers and, of course, often well-founded. Irresponsible white medical officers in the past have sometimes thought of their Tongan patients as unprotesting objects upon whom a surgical technique might be polished and refined, irrespective of whether or not immediate surgery was called for, and irrespective of resulting and perhaps unnecessary death.

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This and other factors have resulted today in an attitude among many Tongans of going to hospital at so late

743 a stage in their disease that the case is hopeless: the patient
177 will surely die if he stays out of hospital, he will most likely
829 die if operated upon. The dilemma of the conscientious white
doctor, therefore, is a cruel one: whether to use what skill
he possesses in an attempt to save life, an attempt in which
the chance of success is small; or whether to keep the sick
person out of hospital on the theory that the fewer the
Tongans who die in hospital, the more chance there is in the
long run of having the Tongans accept white medical skill
at a time and stage in their illness when safe and effective
help can be given. The white man's medical science will
only be accepted by the villager in preference to native treat-
ments and conceptualizations when he has confidence in this
science. In the present day relations between white doctor
and village-patients, there is nothing more difficult to achieve
than this substantial measure of confidence without which
white medicine is ineffective, and the pain and suffering of
preventable disease among the villagers go unchecked.

177 The attitude of fear is no longer a specific attitude
829 directed to this white doctor or that. It applies to the whole
759 system of white medicine. It applies also, therefore, in
759 large measure to those Tongans who have been trained in
Suva as native medical practitioners, and who conscientiously
attempt to apply in Tonga what they have learned of white
medicine. It is revealing to note in this connection that one
trained Tongan medical practitioner who, far away from
control by a white doctor, practises a strange mixture of
white science and native herbalism (mostly the latter), is
so extremely popular with the Tongans that they come from
far and near among all the northern islands of the kingdom
to consult him and to suffer his treatments. They feel
confidence in this Tongan because his medicine is nearer
ancient Tongan practice than white medicine. The addition
to these familiar techniques of a crude surgery and some of
the more potent white man's drugs, serves but to increase
his prestige among his patients. His treatments combine
both the familiar and the strikingly novel in a manner that
has irresistible appeal to the Tongan of today who has a
foothold in two cultures and is not yet prepared for the best
that white medicine can offer.

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The practice of this Tongan incidentally offers a difficult problem for the white doctor who is his theoretical superior. Should the Tongan be disciplined because he is to some degree playing fast and loose with the knowledge of white medicine gained in hospital and medical school in Suva? Should he be allowed to practice unchecked, with the end in view that he is accustoming some Tongans at least to some of the methods and ideas of white medicine, even though he is admittedly "misusing" others? The questions are hard to answer. The white doctor, more thoroughly trained in a scientific tradition than the semi-trained Tongan, may decide that the practice of the latter is nothing but a travesty of white medicine. Hence it should be strictly controlled. On the other hand, the student of culture-change must perhaps recognize that today, the Tongans are still closer to aboriginal culture than they are to full participation in traditional and scientific beliefs of western European culture. From this viewpoint, a Tongan who combines native with scientific medicine, skilfully blending the proportions of the two in such a way as to secure and keep the confidence of his Tongan patients, represents not only what the Tongan wants, but also in a very real sense, what he needs and can absorb, according to his position on that theoretical base line that joins aboriginal Tongan culture at one end to western European culture at the other.

At this stage, to give the Tongan more than he can adjust to, even though that "more" will theoretically keep him in better health, is to overlook the fact that there is such a person as a patient and not merely a disease to be treated: a patient with all the hopes and fears and anxieties, all the attitudes, beliefs, and customs which make him regard a scientific medical tradition with more than a little scepticism. A rigorous and orthodox practice of this medicine may theoretically cure a disease. At the same time it may also antagonize a patient, a person of flesh and blood, but also a person chock full of the most contradictory emotions. Education of the Tongan in such fashion that ultimately he will accept and welcome white medicine is bound to be slow and laborious, a step-by-step method with the only alternative an all-or-none reaction that is more likely to be none rather than all.

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A practitioner, therefore, who gives the Tongan only what he can absorb and adapt to at the present phase of cultural change, may thoroughly shock the rigorously-trained white doctor (forgetful as the latter may be at times of the stubborn resistance to modern medicine among the less-enlightened members of his own culture). But at the same time, such a practitioner may in the long run be doing more for the health of the Tongan by giving the patient what he can take instead of what he ought to need, than all the most freely available refinements of surgical skill and drug therapy. Recognition of a sick Tongan rather than of a disease with a Tongan attached thereto is indubitably one of the more important lessons in the book called culture contact!

KAVA-DRINKING

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Kava-drinking in Pangai is a purely social activity. For some few men the social significance is outweighed by an addiction to the drink which drives them to drink *kava* more for the drinking's sake than for the opportunities which the drinking provides for social intercourse. These men are exceptional, however. For the rest *kava*-drinking provides the excuse for meetings where everything that can possibly come within the intellectual horizon of the villager is argued and discussed again and again. For young people these meetings offer an opportunity to listen to their elders talk. In this way they learn much of the stock information and traditions of the village. This of course applies only to young men. Young women are not present at these parties, except only the young girl who has been chosen to make the *kava*. But girls may participate as listeners in the smaller and more occasional parties initiated by older women for women only. Older women may also be present at the men's parties, particularly those women of the household in which the party is being held. An older woman or two are most likely to be present at the party if it is pretty clear that it has been started by a young man wishing to court the girl of the household who is acting as *kava*-maker.

(584)
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A record was kept for sixteen days of the frequency of *kava*-parties in the village. There is no reason to assume that the number of parties held during these days was in any

177 these clothes at any other time. Clothing therefore is a
 178 blend of old and new, but when materials and clothing-styles
 291 are both considered, it is again difficult to say in any simple
 292 fashion whether current practice is more nearly related to
 aboriginal or European custom.

178 Finally, to take but one more example, there has been
 177 in the field of housing a transfer of both form and materials.
 342 In the village today one sees frame-houses with iron roofs
 of European form, frame houses with iron roofs of Tongan
 form, and thatched houses of aboriginal form and materials.
 (343) This refers only to dwelling- and sleep-houses. Separate
 cook-houses are uniformly of Tongan materials and form,
 while the privies are uniformly frame structures of European
 form. Is the present housing of the villager more European
 than Tongan as regards both form and materials? Again
 it is hard to give a simple answer.

177 Village attitudes in regard to both clothing and housing
 178 may perhaps be best understood partly as an expression of a
 substitution of new for old which, to use Parsons' phrase,
 gives "an old habit of mind a new expression" or uses
 "something new in accordance with something old."²⁴

177 When we consider social and economic organization,
 178 answers are equally hard. At one end of the scale, treat-
 757 ment of disease is almost purely in terms of Tongan concepts
 (364) and materials with such exception, for instance, as in the
 (743) control of a typhoid outbreak when quarantine is enforced
 and European medical treatment often welcome, or in such
 surgical practice as the supervision of adolescent boys,
 where the tendency in the village is to expect such surgery
 to be carried out at the hospital in Neiafu. At the other end
 177 of the scale might be placed religion, where Christianity has
 178 been taken over lock, stock, and barrel, and there are
 771 relatively few survivals of either knowledge or belief in
 aboriginal religious forms. A Christian morality based on
 Biblical teaching has also become the accepted morality of
 the community.

(113) ²⁴ See Parsons, E. C., *Mitla, Town of the Souls*, Chicago, 1936, for a
 consideration of the role of this factor, among others, in culture-
 contact. Herskovits, M. J. has a brief but valuable discussion of this
 and other studies of acculturation in his book, *Acculturation*, New
 York, 1938.

THINGS ANTHROPOLOGICAL AND ZOOLOGICAL. 373

present population of Tongatabu. Since that time the population has been either stationary or decreasing—slightly under normal circumstances, rapidly in time of epidemic. In 1893 the measles and the diseases consequent upon it carried off one-twentieth of the people. In the absence of such severe visitations whooping-cough is the most destructive of the introduced diseases. The mothers lack the knowledge and the self-devotion required to successfully nurse their children through such illnesses, and content themselves with calling in one native quack after another to dose the unfortunate child with a succession of nostrums until death puts an end to its sufferings.

For the low birth-rate there are several reasons. In ancient times the women were required to do no work beyond the light occupations of fishing and cloth-beating. The men planted the food, carried in the wood and water, and did the cooking. The missionaries have so industriously cultivated the idea of family life that in most Tongan households the women, after marriage, do the same work as the wives of the peasantry in Europe. In other respects they have greater liberty than under the heathen system. Formerly a girl's hair was cropped short at about twenty, and she was thenceforward classed as an old woman (*sefine motua*). No woman of mature age could then masquerade in the guise of a young girl, and there was no inducement to defer marriage and the cares of maternity; for the woman who aspired to be younger than her years had no peace from the sneers of her contemporaries. This is all changed. Under the grim social code of the missionaries, by a mockery of fate, a laxer

THE QUEEN'S BEDCHAMBER 175

carried in piecemeal or the palace built round it. ³⁴⁴
It belonged to the period when the Germans ^[648]
acquired their coaling-station and Mr. Baker was
decorated with the Red Eagle of Prussia. There
are four large rooms on the upper floor, three of
them furnished in European style, and the fourth
used as a lumber-room for the toys and litter
which Polynesian chiefs buy so readily and tire
of so quickly. We found Her Majesty in the ⁶⁴⁴
best bedroom, which is furnished with a four-post ^[352]
bed and Brussels carpet. Everything was im-
maculately clean, and there was nothing to show
that the room did not belong to an European
lady. The queen wore a pink silk wrapper, and ^[291]
was sitting in a low chair with her brown baby
on her knee. Her illness, which at one time had
caused great anxiety, accounted for her pallor
and her delicate appearance. Though she is not ^[576]
handsome, her slenderness and her delicacy of
feature give her a certain air of distinction, and,
like all Tongan women of good family, she has
pretty manners. Having made my christening ^[648]
present and kissed the baby, I took my leave.
During the queen's illness Dr. MacLennan had ⁶⁴⁴
a busy time, for, though the king has an implicit ⁷⁵⁷
belief in European treatment, the old ladies ⁷⁵⁹
about the court insist upon administering nos-

176 THE KING AND HIS MINISTERS

644 trums of their own on the principle of "more
757 medicine, quicker cure." It is only by simulated
759 outbursts of indignation that Dr. MacLennan can
get his orders obeyed.

752 In surgery alone do the Tongans frankly admit
their helplessness. An old shed in our host's
compound had been hastily converted into an
operating-room, in order that the presence of
a naval surgeon to assist in operations might be
[164] turned to account. For several days in succe-
sion the two doctors were operating on bad cases
of elephantiasis, the relations of the patients
camping outside to act as hospital nurses. Even
under these unfavourable conditions the patients
all made rapid recovery, but there was one pain-
ful case in which the patient deliberately pre-
ferred death. A young man, while pig-shooting
in the bush, had put a charge of shot into his
own leg, shattering the ankle. There was no-
thing for him but amputation, but when his
relations heard that he must lose his foot, they
refused to allow the operation. They would try
herbs, they said, and for a day or two they
brought reports that he was better. Gangrene
at last set in, and while there was yet time I
went to reason with the lad's mother. Secretly,
I fear, the reflection that if he lived the lad would

Notes on Tongan Religion.

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god of carrying away, or who carries away, but I have heard no reason for his being thus dubbed. His sacred animal was the pretty little blue and green lizard called by the Tongans *pili*. [776] [825]

Tau-ki-bulotu was the god of Haa-Mene-uli, a part of Niutoua, in the east of Tongatabu. No sacred animal is known, the deity manifesting himself through his priestess, Teletele. [825] [795]

Vai-uka also had his seat near Niutoua, but across the border in the Tui Tonga district of Labaha (same word as the Fijian Lambasa). He was the god of the Haa-Mofuta. Mofuta will be remembered as occurring in the name of a neighbouring deity, Mofuta-ae-ta'u.

This god had no special temple, but the priest was consulted in his own home. There was, however, a sacred grove near which becoming silence must be preserved. The hard black volcanic pebbles, valued on account of their durability as heating stones for the ovens, and also used in the adornment of graves, were sacred to him, and the ground within the grove was strewn with these votive offerings. These pebbles must of course be brought from one of the distant volcanic islands. Vai Uka was much resorted to by the sick. The priest stroked the seat of affliction with the happiest results. It is not clear how far these cures can claim to be supernatural, as such soothing massage is still a regular part of Tongan medical practice. The god's pharmacopeia is strongly parallel too to the healing art of mere mortals in its employment of a liniment whose manufacture and use are far from being divine secrets. [776] [778] [252] [764] [782]

Tui Olotau, King of Olotau, god of Olotau, the piece of ground on which stands the well-known trilithon, the Haamonga-a-Maui (The Burden carried on the Shoulders of Maui), in the eastern part of Tongatabu. His sacred animal was the sea-snake, which is also connected with Hemoana. If a sea-snake were seen ashore the people knew that it was no ordinary sea-snake, but the god. [776] [349] [776] [825]

The *kalae*, a rail sacred to the Tui Tonga. I have not been able to find out the name of the inspiring deity. The worshippers of this bird used to take about with them a bunch of *kalae*, and, as already mentioned, the priest had one of these bunches tattooed on his throat. [643] [304]

This bird's crying at night was an omen of death, and in this connection he was called by the sinister name of *Fata*, the Bier. The home near which he was heard would be the scene of death, and as he flew away the direction from which his note was heard was an indication of the situation of the cemetery in which the dead would be buried. Either through a strange coincidence, or through this bird being in some way attracted by serious illness, the monotonous cry of the *kalae* in unusual numbers added to the dreariness of the nights in November, 1918, when the whole of Nukualofa was filled with the sick and dying, struck down by the wave of pneumonic influenza. [825] [763] [164] [165]

Sickness, Ghosts and Medicine in Tonga.

137

painful, but the next day I walked about without the least twinge. 752
I asked her how she knew where to rub. She replied that she just 759
rubbed. "Well," I said, "How did you learn to do it?" "By
doing it," she answered, "my father used to make me go and do it
for people." And that was all the explanation she was able to give.
At another time I was cured of a strain in the groin by a man who
just pressed the top of his thumb gently on the strain, so gently that
I thought he was afraid of hurting me: but I was quite well in a
few hours.

The trouble with the Tongan practitioners is that they have little 757
or no idea of diagnosing a complaint. They just try one thing after 759
another, and the massaging, excellent as it is, is frequently employed
where it is not only useless, but even dangerous. Diagnosis is
replaced by a series of trials and failures; as the Tongans say,
"We'll have a try." If one thing does not show quick results, try
another. A man went to a missionary and asked for medicine for a
little girl. "She is very ill indeed," he said, "yesterday we gave
her seventeen sorts of medicine and she is not better yet." Different
practitioners have their own special remedies. One medicine man, or
woman, after another, tries his cure, till one is found which gives
promise of success, which shows a "sign," or until death cuts short
the experiment, and gives a verdict which is accepted with pious
resignation as the will of the Lord.

Nor are efforts at cure confined to the person of the patient. 775
Neglect of the dead is a fruitful source of discomfort and sickness to 753
the living. Many ghosts, however, do not seem to merit so much
fear as pity. Certainly there are bad-tempered ghosts, who are the
ghosts of bad-tempered people pretty often, but frequently the dead
cause annoyance to the living to draw attention to their own miseries.
The root of a tree has grown through the head of a buried corpse 775
and a living relative suffers from headache. Of course the cause of 753
the trouble may not be located at once. The living sufferer has 769
recourse to one treatment after another. All is unavailing. At length
the cemetery may be tried. The grave is opened, the root cut out,
and the headache disappears. It happens, in the cases of this sort
of which I have heard, the patient has generally, if not always been
a woman, and the suffering corpse, or ghost, that of an elderly female
relative. Sometimes a rearrangement of the buried bones sets
everything right, and effects a cure. This ghostly physic is not
effective only in cases of headache. The woman who so courageously
bore the loss of a rib made good recovery, except for a small hole
which refused to close up. It did not occasion any real discomfort,
but naturally she preferred to be without it. An investigation of her
mother's bones was at length decided upon; but I have not heard
whether it has been carried out. The inconsiderate affection of the 775
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775 dead may cause much trouble to the living. The poor ghost longs
787 for companionship that it has lost, and wanders forth to seek its old
friends, and induce them to come with it. It enters, or approaches,
the body of a living friend, usually by the way a hysterical woman,
and she may become so violent and excited that several people are
required to hold her. A girl in this condition gave a man a good
bite in the side; but this exhibition of her powers did not deter him
from afterwards marrying her. Perhaps the possessed woman may
lie inert, taking no notice of what is said to her. She may tell the
onlookers that so-and-so wants her to go with her. One way of
treating the trouble is to knead the patient with the knuckles, to
press the intruder out. I know a man who chased a ghost round the
body of a woman with hot-water packs.

775 Fainting fits may be due to the attentions of ghosts. A person in
753 a faint is said to be *mata*, dead. I have heard an unconscious child
[761] spoken of as distant, or away; apparently the soul was away.

[774] Massage is not the only remedy. There are leaves which are
potent layers of ghosts. Tongan treatment is homœopathic, and the
775 effective leaves have a strong smell. They are said to *namu tevolo*,
755 smell like a ghost or spirit; consequently they have the power of
757 scaring off ghosts. A decoction is made of the leaves, and the juice
787 pressed into ears, eyes, nostrils and mouth, and perhaps rubbed on
the body. Ghosts cannot pass the barrier thus set up. There seems
to be no apprehension lest the ghost be imprisoned inside the patient.
When the patient weeps quietly that is a sign of recovery. Her
tears are in sorrowful farewell to her dead friend who is leaving her.

Procedure is simplified by the patient's telling the name of the
ghost. The sick girl may not herself know who it is that is so
unkindly affectionate, but sometimes she sees the ghost in a dream
or in a waking vision, or recognises its voice. Armed with this
775 identification of the intruder, friends visit the grave, and beseech the
769 dead to leave the living alone. There is not a set form of words to
be used; respectful remonstrance, threat, anything is in order that
may be supposed to be effective. Sometimes the grave is opened and
medicine leaves put on the body. A very drastic remedy is to pour
boiling sea-water on the grave, though this is not necessarily more
effective than turning the bones about and mixing them up. If the
head is put where the feet ought to be, and the legs where one would
expect to find the head, the cleverest ghost is unable to get itself
775 sorted out and in shape for walking. Ghostly visitations are not
always an occasion of sickness. They may be manifested in mys-
terious lights. People are rather ashamed of having their dead
relatives walking about. Neighbours are inclined to judge harshly,
and to conclude that the spirit is failing to make good its entry into
heaven, and is exhibiting a not unnatural reluctance to take the final

752 leaves that are drunk tend rather to poison the patient than to assist
753 his cure; but applied to pneumonia, pleurisy, or consumption, the
method is disastrous. The ideas which direct the healer are of the
haziest. I once questioned a man, an intelligent man to boot, who
was a noted healer in this genre, as to the type of disorder which he
treated. I said that I could understand that a broken bone, or even
a strained muscle might be spoken of as a rupture, but what sort of
a break was that which made a man have a pain in his chest. What
was broken or strained? "It's just a break," he said, and that was
all about it. I don't think he was guarding professional secrets
through fear of a possible rival.

The rupture that causes the trouble may not be recent, but a little
judicious questioning does not fail to identify at last the incident to
which the blame attaches. A forgotten fall, or the lifting of a heavy
weight, is recalled; "Ah, that is it."

753 A third great class of sicknesses embraces boils and ulcers and
827 rashes and skin diseases generally, as well as swellings and tumours.
These external complaints have individual names, but the class name,
hangatamaki, is applied with the usual vagueness to diseases external
and internal. A specially severe sickness of this sort is "various
thing," an internal complaint, in which a mixture of troubles are
present, together with a roving commission which enables them to
attack different parts of the body simultaneously or successively.

755 The medicines for this type of disease seems to have a special viru-
757 lency, or to be specially suitable for witchcraft. Medicines in general
have the power of causing the sickness which they cure. A girl
had a swelling on her abdomen which was cured by a woman, but
the girl's brother afterwards had a swelling on the neck. This was
caused by the medicine which had cured the girl. A woman was
once sitting quietly in church, when all at once she commenced to
cough. She coughed, and coughed, and presently felt something in
her mouth. She put up her hand and grasped it. It was smooth
and round. She thought it was the end of her bowels! She pulled,
and the thing came away in her hand, and she cast it from her on
the floor—a big, strange, hairy worm. Then she gathered it up in
her handkerchief. In spite of her fright, she evidently felt strong
proprietary rights in the creature, and would have resented anyone
else picking it up; "If I can't pick it up, who can?" The sagacious
suggestion was made to drown the animal in medicine, and so make
a potion able to cure a similar disorder should it ever reappear. But
the worm would not drown. It was thrown into various medicines,
but thrived in them all, and at last was cast into the fire and burnt.
Thus science, on the verge of discovery, was again baffled.

Since medicines have the power of causing the ills they cure they
must be treated properly. Unauthorised meddling with medicine

Sickness, Ghosts and Medicine in Tonga.

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is dangerous. The practitioner, when he has finished his treatment, 755
carefully puts his basket or little bundle of medicine away in the 757
shade, perhaps in the fork of a tree in the bush—it should not be 783
left in the sun; and then he washes his hands. The owners of
healing secrets generally guard their knowledge pretty jealously, and 759
some virtue resides in themselves. It would be useless, if not
dangerous, to steal anyone's medicine, but the prescription will be
effective if properly bestowed by one person on another. There do 755
not seem to be, however, any special ways of gathering the barks 757
and leaves used, though I have been told of a medicine whose base 783
is a bark which must be scraped from the tree when the rising sun
shines upon it, and there is another in which leaves are cut down the
middle, and the right halves thrown away and the left used.

In addition to the ordinary massaging there are gentle strokings,
some of which appear rather mysterious in their operation. A white
man, young and alert, told me that he had a painful swelling on his
back, like a blind boil. An old woman came to him equipped with
a concave sea-shell with a hole bored through the middle. She
lightly outlined with the edge of the shell a square round the
swelling, and then placed the shell, hollow side downwards, on the
swelling, and gently stroked the shell. There was immediate relief
and improvement; the trouble was much better next day, and quite
cured in three days.

Less mysterious, and less effective than the white man's stroking
the back of a shell, is the practice of holding the stomach of anyone
suffering from abdominal pains. The shooting pains caused by wind
give rise to much alarm. It is thought that vital parts of the body 753
are leaping out of place, and, quite logically, the friends of the
patient seek to hold the restless organ in its proper position. To the 758
Tongan, Europeans probably seem rather heartless in leaving the
sick alone as much as they do. Tongans are continually doing
something for the patient, holding his head, or massaging his
stomach, or what not. It would be very worrying to a sick European,
though it must be admitted that much of the stroking and rubbing
is extremely soothing. I have known a woman in difficult labour to 844
have all her pains instantly relieved by the gentle pressure of an old 759
midwife's hands.

Toothache, which must be more common now than it was once, 752
is the subject of controversy. Some hold that it is caused by the
boring of a little animal, whilst others maintain that it is just a sick-
ness. So far as I have heard the evidence the partisans of the borer
theory seem to have the stronger case, as a girl told me that she had
herself seen a grub in a man's hollow tooth.

Children's illnesses are often attributed to "remembering," that 753
is pining for an absent relative. A child is ill; remedies are tried in 858
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17: Collocott M-5 (no date) 1923

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753 vain, it is remembering. The cure is what parental affection
858 naturally prompts. The absent father, or mother, or whoever it is
593 that is remembered, is communicated with, and never fails, if it is at
602 all possible, to hasten to the side of the little sufferer, and the cure
755 is wrought. Although Tongan medical practice is vitiated by the
757 inability to diagnose correctly, it would be unfair to suggest that
many valuable remedies have not been found amongst the native
[302] plants. Ageing beauty, by the way, has found the secret of restoring
[758] a glossy blackness to greying locks. Nor would it be fair to refuse
to admit the skill with which some things, once they are recognised,
are treated, and it would be ungrateful for one who has lived long
amongst this affectionate people to forget the tender care they lavish
on the sick foreigner, as well as on those of their own race.

362 [435] £15—having a thatched roof, reed walls, and an earthen floor. Their construction ensures dirt, dust and damp. Health would certainly improve, along with comfort, if they were required to have wooden floors and more satisfactory roofing.

743 Tonga has long had a system of free medical benefits. These are provided by the Medical Department which has a hospital of fifty beds at Nukualofa, one of twelve beds at Ha'apai, and one of twenty beds at Vavau, all of them equipped with operating theatres. In addition

759 [743] there are dispensaries in both the Nuias and also in Eua. A European doctor is head of the Department, and a European matron runs the Nukualofa hospital, but the rest of the staff is entirely Tongan, comprising thirteen medical practitioners, ten nurses, four dressers, and two dispensers. Their work comes up to a high standard, and they are more suitable for dealing with their own people than Europeans are. There is a high turnover of nurses through marriage, but not a wastage, since ex-nurses play a very valuable role in their villages as voluntary medical

757 workers and educators. Such education is needed because the Tongans are not only inclined to be careless about their ailments but also to be suspicious of western medicine.

TONGA'S ATTAINMENTS AND PROSPECTS

642 This sketch of modern Tonga describes how a small oceanic peasantry has made a way of life which is suitable to the dignity of free men, in harmony with the requirements of economic justice and [648] full of promise for the future. The Tongans are unique and significant in being the only independent people of the Pacific; subject, it is true, to the control of the British Colonial Office in foreign affairs and to its supervision over public finance, but in all other respects free from the domination of a master race and secure in the possession of their [178] national heritage. Continuity has been preserved with traditional institutions, and modern impacts have liberalised rather than destroyed them. This liberalisation is far from finished and may well lead to the development of a mature Polynesian democracy.

434 Tonga provides its people with a modest, but adequate and secure income; modest because its cash value probably does not exceed £50 a year, adequate because it provides them with enough food, clothing and housing to keep them well and happy, and secure because it is largely independent of economic fluctuations. The Kingdom is far

797 selves of medical Missionary skill: while, at the
177 same time, they have confessed to the general
efficacy of the treatment received, by the entire
abandonment of many of the quackeries of their
own professional doctors.

756 These Tonguese doctors, or *kau faitoo*, were a
759 distinct class who confined the knowledge of their
art to their own families, and thus made the
employment, which was lucrative, hereditary. The
[755] practice they followed was a combination of sorcery,
[757] and superstitious ceremony, with the administra-
tion of herbal medicines, or the external application
of medicated oils, or pounded leaves. Unquestion-

[824] ably, their knowledge of the medicinal properties
of herbs was considerable; but, not unfrequently,
fatal results ensued from their prescriptions. Some-
times, in heathen days, these occurred by design,
and at all times their administration might be
accompanied by serious accident. For the sake of

757 securing greater secrecy, the herbs are often
gathered during the darkness of night. Hence
cases have been known, in which a deadly poison
has thus become mixed with the intended medicine,
and the patient has been destroyed. For the relief
of local pain, the natives are great believers in the
soothing and curative powers of proper external
manipulation and friction, as well as in a liberal
depletion, by small gashes, made over the afflicted
part, after the style of "cupping." In rheumatic
[171] affections, and pains of a kindred nature, the
natives employ medicated embrocations, which, I
believe, are similar to those mentioned by Dr.
Seemann as in use among the Fijians.*

752 In setting limbs, a few of the Tonguese doctors

* "Viti," by Dr. Seemann, p. 340.



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Medical service is free in Tonga. Modern medicine is thriving, and there are hospitals in all the main islands. Outreach clinics are also held periodically in villages, such as this photo (above) of a student nurse, Susitina 'Ofa, running a well-baby clinic in Kolomotu'a. Meanwhile, Tongan folk medicine is still practiced widely. In the photo at right, 'Ana Koka obtains scrapings from a *lephina* branch (a variety of the castor-oil plant) to prepare a remedy for her sick son, 'Afa, in 'Ohonua, 'Eua. Liquid made from the inner bark is used for treating fever or inflammation, and it can also serve as a laxative. [824] [759]

'Oku ta'etotongi e faito'o kotoa ki he kakai Tonga. 'Oku fu'u manakoa 'aupito e faito'o fakapepalangi. 'o hange ko ia 'oku ha 'i he ta 'i 'olunga. Ko e ta'ahine neesi akoake ia ko Susitina 'Ofa 'i he fale sivi pepe 'i Kolomotu'a. Ka neongo ia, 'oku kei malohi 'aupito pe foki mo e faito'o fakatonga, 'o hange ko ia 'oku ha 'i he ta 'i to'omata'u. Ko 'Ana Koka ia 'oku ne vauvau ha va'a lephina ke 'ai 'aki ha faito'o ma'a hono ki'i foha ko 'Afa. Ko e ongo me'a eni mei 'Ohonua, 'Eua.

39: Gerstle & Raitt C.Q-4,5 (1952-1972) 1974 0119 Tonga 009



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TONGAN RAZORS

[113

SUNDAY 25th. In my walk to day I happened to step into a house where a Woman was dressing the eyes of a young child which was blind; the eyes were much inflamed and seemed to be covered with a thin film. The instruments she used were two slender wooden probes, with which she had probed round the eyes so as to make them bleed; she had almost finished the operation when I went in so that I saw but little of it.¹ In the same house another women was shaving a Childs head with a Sherks tooth stuck into the end of a piece of stick, she first wet the hair before the razor with a rag dipped in water; the operation gave no sort of pain to the Child although the hair was taken off as close as any of our razors would have done it,² I tried one and found it an excellent succedaneum. But the men shave the beard with two shells, one of which they place under a small part of the beard and with the other scrape that part off;³ in this manner they will shave very close, the operation is rather long but no ways painfull and there are men who seem to profess it, and it was as common for to see some of our men sit to be shaved by these shavers, as it was for the Chiefs to come aboard to be shaved by our Barbers.⁴

Finding we got little or nothing where we lay,⁵ I resolved to change our station and wait Feenoughs return in some other place; accordingly in the fore noon of the 26th we got under sail and stood to the Southward along the reef of the island, having 14 and 13 fathom water a sandy bottom. We however met with several detached Shoals, some were discovered by breake[r]s, some by the Water upon them appearing discourlered and others by the lead. At half past two PM having past several of these shoals and seeing more

were said to be at Huhine; and he was to have another one, p. 196 below. '... the man gave such answers & drew the number of the masts upon the sand, as to stagger us & put some confidence in the report, the fellow was very ready to go in our boats to prove the truth of his tale.'—King. [648]

¹ Mariner has an interesting paragraph on Tongan ophthalmia and eye-surgery, II, p. cii: ending, 'Mr Mariner neither saw nor heard of but one man who had lost his sight by disease'.

² 'an absolute fairness [it] will not take it off so [well] as scissors.'—Eligh AL, I, p. 260.

³ 'this is a better [plan] and they cut their bea[rds] off pretty close.'—Eligh AL, I, p. 261.

⁴ 'none of our Sailors could bear it & none more than once try[d] how] they liked the meth[od].—Eligh AL, I, p. 261. Cf. Ellis, I, p. 93, on Tongan feelings in the matter: 'This operation [with shells] however is rather painful and tedious, and observing how expeditious and clean we performed it, they were desirous of trying it also; and it so far exceeded their expectations that scarce a day passed without plenty of customers.'

⁵ 'But we have purchased almost all their commodities; they having very few things to dispose of except their young Girls which seems to be almost the only trade at present, & indeed is very advantageous to the men, for they are paid a hatchet for every night lodging, or a Shirt.—This seems the Common run of trade—but in some instances I have seen two hatchets & a shirt or sheet given for a Nights lodging with a fine young Girl.—The men receive what is agree'd for & leave them on Board, & come for them again the next morning, & if the girls get any thing more they take it away the moment they come.'—Bayly T, 28 May. [336] [439]

1777]

MOURNING CUSTOMS

[947

an idea of such rigorous discipline that must require either an un-⁷⁶⁵
 common degree of affection or the grossest superstition to exact. I will³⁰⁴
 not say that the last has no share in it, for in some cases it is so
 universal that many could not have any knowledge of the person for^[766]
 whom the concern is express'd—such for instance as the case men-
 tion'd of the people of Tonga mourning the death of a chief at
 Va'vaoo; unless we allow that it is customary to have a general
 mourning for persons of eminence, as seem'd to be the case on our
 arrival at Tonga, when a great number of the people who had been
 with us at Annamooka cut off their hair for a chief who had died at
 Tonga a month before, and at the same [time] it should be observ'd
 that the painfull operations are only done by the nearest connections.
 When a person dies he is buried the same day, after being wrapp'd⁷⁶⁶
 up in matts and cloth, much after our manner: the chiefs in this case^[764]
 having the Fyatoockas appropriated to them but the common people
 are interr'd in no particular spot. What part of the mourning cere-
 mony follows immediately after is uncertain, but that there is some-^[765]
 thing besides the general one we were inform'd of from the death of
 Mareewagges wife, who died while we were there and was to have
 five days spent for that purpose by all the principal people in com-
 memoration of her.

Their long and general mourning proves that they consider death⁷⁶³
 as a very great evil, and this is confirm'd by an odd custom they⁷⁸²
 practice to avert it, for when they suspect themselves in danger from³⁰⁴
 sickness they cut off their little finger as a propitiation to the Deity.
 The operation is perform'd with one of their stone hatchets with
 which they make a tolerable stump, but never cover it afterwards,^[752]
 leaving these and all other sores expos'd to the air; nor do they seem^[757]
 to have any method of assisting the cure of diseases of any kind, the
 only instance I saw being some incisions made in a large swelling in a
 mans arm to discharge the matter by. There is scarcely one in ten but
 are thus mutilated in one or both hands (which is sometimes done
 on the illness of their chief as well as themselves) and has a dis-
 agreeable effect, many being cut so short that they have incroach'd
 on the bone of the hand which joins to it.

There is another custom amongst them call'd Taboo whose precise⁷⁸⁴
 meaning we do not well understand. The word itself implys no more
 than that a thing is not to be touch'd, and therefore every thing that
 is under such restriction for certain reasons is said to be Taboo'd. It
 seems a custom of great force and extent and in some measure may be
 reckon'd of the sacred or religious cast, relating to things hallow'd
 and forbidden. Thus the Fya'tocka at Poulaho's house was not to be^[764]
^[651]

ANTHROPOLOGY

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as an illustration of an attack that might well be more fruitful in other and more competent hands. 114

DREAMS AND PSYCHIC STRESS

Dreaming occurs fairly frequently among the villagers of Pangai. Men had no hesitation in telling their dreams to us or else recording them for us. The women, however, were much shyer and it was only by considerable perseverance that Pearl Beaglehole was able to record any dreams at all from women informants. There is no reason for thinking that women dream less than men. Many dreams seem to be in terms of conventional cultural symbols and are given a conventional interpretation by the Tongans. Thus for a husband to dream of money or a ring is a sign that his wife is pregnant. Dreams portending death, usually of a member of the family or some other close relative, are those of teeth falling out (said to be a common type of dream), dreams of feces on the body, dreams of touching or handling a hen's egg. Dreams of approaching fire or of slipping down into a bottomless pit are terror dreams, generally interpreted as warnings of possible punishment should the dreamer continue to commit minor sinful acts. One informant also stated that dreams could be used to validate medicinal recipes. His mother's father was visited by a female spirit in a dream and given a successful recipe to cure barrenness and sterility in women. 154 123 154 828 787 154 787 757

Wish-fulfilment dreams appear to be frequent and capable of easy interpretation. The following are examples of this type of dream: 154

Case 1.—Avai, a boy of 18, home on vacation from a Seventh-Day Adventist College in Nukualofa, reported to me several dreams in which "a girl friend" appeared and offered herself to him in sexual intercourse. Tongan sexual morality among young people is relatively strict. Avai had previously been asked to leave the Government College, Nukualofa, for absenting himself at night from the college. He had determined to reform, but the occurrence of this type of dream suggests that his reforming zeal was not without its intrapsychic conflict. 159 826 873

Case 2.—Loata, a woman of about 35, our next-door neighbor and one very poor, even according to Tongan standards, narrated the following dream to Pearl Beaglehole: "You brought me a beautiful new dress as a gift and also a lot of pins to fasten it together after it had been fitted. My daughter Saane (6 years old) ran away with the pins, and when I chased her she suddenly changed into Saane Tapaka (a girl of 18 employed by us as housegirl, with the same first name as the daughter—we had previously given Saane T. a dress). I could not catch her, and when I came back to my house to get the dress I found you had gone and the dress was nowhere to be found." This dream is, I think, self-explanatory. Loata dressed for the most part in rage because her husband was too poor to buy new piece goods at the village store. 291

Case 3.—Kafa, a young woman of 18 years, married for two years without yet becoming pregnant (a rarity in Tonga), confesses to many dreams in which she gives birth to and nurses an infant. She also dreams occasionally that her husband, the local storekeeper and a hardworking man, has eloped 842

* Field work on which this paper was based was carried out in Tonga, December, 1938, to February, 1939. Pearl Beaglehole and I lived in the village of Pangai, Vava'u, a small Tongan community about six miles distant from Nelafo, government and trading center for Vava'u, the northern group of Tongan islands, 170 miles away by sea from Nukualofa, capital of the Tongan kingdom. The population of Pangai is about 270. Pearl Beaglehole helped me collect the material here recorded. Dr. J. C. Lopdell, Assistant Medical Officer, Vava'u, kindly gave me the information on which Case 10 (below) is based. 101

* E. W. Gifford, "Tongan Society," *Bishop Museum Bull.* 61, 1929, pp. 337-338, gives several further examples. 113

Tongan name: *mo'ota*.

137 The plant parts when crushed have a somewhat disagreeable odor said to
278 resemble that of fruit bats (flying foxes). The leaves are used medicinally and
757 an extract of the leaves is used for wetting tapas to cover the body "in cases
396 of weakness." The wood is used in making canoes and banana shooks and
415 for general building purposes.
313

824 *Dysoxylum tongense* A. C. Smith, U.S. Nat. Herb., Contrib. 30: 509, 1952.

Large tree, up to 10 m. or more tall, branchlets stout and with large, rounded leaf scars. Leaves even-pinnate, up to 25 cm. or more long, leaflets elliptic-ovate, acute, base obliquely inequilateral, up to 15 cm. long and 8 cm. wide, glabrous, pinnately nerved, petiolules about 1 cm. long. Flowers small, sessile, in axillary, paniculate clusters up to 12-14 cm. long, parts of inflorescence puberulent, corolla greenish white.

'Eua: *Parks*; in forest above Fuai plantation, Mar. 18, 1953, *Yuncker 15316*; edge of forest near center of island, Mar. 18, 1953, *Yuncker 15336*; Mar. 19, 1953, *Yuncker 15366*; Apr. 7, 1953, *Yuncker 15662*.

So far as I know, this species is restricted to 'Eua Island above about 100 m. altitude.

Tongan name: *mo'ota kula*.

The wood is used in handicraft work.

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Genus *Aglaia* Loureiro

Aglaia heterotricha A. C. Smith, U.S. Nat. Herb., Contrib. 30: 486, 1952.

Tree with slender branches, branchlets, petioles, and lower leaflet surface scaly-hairy. Leaves odd-pinnate, leaflets seven, elliptic, up to 25 cm. long and 10 cm. wide, obtuse, base obtuse or acute, petiolules up to 17 mm. or more long, petiole 15-20 cm. long, conspicuously swollen at base. Flowers about 2 mm. long, on slender, short pedicels, in freely branched, axillary, paniculate clusters, the stamen filaments united into a pilose tube.

'Eua: central plateau, June or July 1926, *Parks 16305*, type collection. Known only from 'Eua.

Aglaia saltatorum A. C. Smith, U.S. Nat. Herb., Contrib. 30: 483, 1952.

Shrub or tree, up to 10 m. tall, twigs and young parts pubescent, hairs brown, stellate. Leaves odd-pinnate, leaflets mostly seven, essentially opposite, elliptic or oblong-elliptic, apex acute or rounded, base inequilateral, obtuse or acute, up to 15 cm. long and 8 cm. wide, pinnately nerved. Flowers small, about 2 mm. long, numerous, in rather large, axillary, paniculate clusters; fruit subglobose or ellipsoidal, about 2 cm. long, brown, stellately pubescent.

Tongatapu: *Setchell and Parks*; *McKern*; in seaside forest below village of Niutoua, Mar. 2, 1953, *Yuncker 15138*.

'Eua: in rich forest above Fuai plantation, Mar. 18, 1953, *Yuncker 15313*.

Nomuka: above village in clearing near sea, Apr. 30, 1953, *Yuncker 15857*.

Lifuka: along road north of Pangai village, Apr. 25, 1953, *Yuncker 15738*.

Vava'u: *Crosby*.

Niutopotapu: on coral soil near dwelling, Jan. 2, 1952, *Hürlimann 649*.

1 / *Dysoxylum forsteri* -- Analyst/
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Occasional¹ in villages as an ornamental. A native of tropical Africa now widely cultivated in warm countries.

Hibiscus syriacus Linnaeus, Sp. Pl., 695, 1753.

Erect, branching, glabrous shrub 2 m. or more tall. Leaves rhombic-ovate, alternate, lower ones often three-lobed, toothed, acute to acuminate. Flowers up to 8 cm. wide, red or purplish, solitary in leaf axils on current season's growth; fruit ovoid, up to 2.5 cm. long.

Introduced ornamental. Occasional. A Chinese species now of worldwide cultivation in tropical and temperate countries.

Hibiscus tiliaceus Linnaeus, Sp. Pl., 694, 1753.

Tree up to 8 m. or more tall with glabrous or somewhat pubescent, spreading branches. Leaves round-ovate, abruptly acuminate, base deeply cordate with a narrow sinus, up to 15 cm. or more long and nearly as wide, palmately seven- to nine-nerved, glabrescent above, paler and densely stellate-pubescent beneath, petioles up to 12 or 15 cm. long. Flowers up to 10 cm. wide, on short, axillary and terminal pedicels, corolla yellow with darker eye, turning salmon red; capsule pubescent, five-celled, several-seeded, seeds glabrous.

Tongatapu: thicket near beach, Sopa, west of Nuku'alofa, Feb. 25, 1953, Yuncker 15027.

Eua: Lister; in thin forest below Fuai plantation, near center of island, Mar. 19, 1953, Yuncker 15358.

Lifuka: in seaside thicket just above high-tide limit, north of Pangai village, Apr. 25, 1953, Yuncker 15742.

Vava'u: Harvey; Crosby.

Tafahi: coastal forest, below township of Tafahi, Dec. 13, 1951, Hürlimann 490.

Frequent throughout Tonga, usually near the shore. Pantropic.

Tongan name: *fau*.

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The bark fibers are used in making cordage, mats, *tauva*, kava filters, and so forth. The wood is used in general construction work and fences; the bark and young leaves, in the treatment of skin diseases.

Genus *Thespesia* Solander

Thespesia populnea (Linnaeus) Solander, ex Correa, Mus. Nat. Hist. Nat. Paris, Ann. 9: 290, 1807.

Medium-sized, round-topped tree, the young branches brown-scurfy. Leaves simple, alternate, somewhat fleshy, ovate, acuminate, base cordate with an open sinus, entire or rarely somewhat lobed, palmately five- to seven-nerved, up to 12 cm. or more long and 10 cm. wide, petioles up to 10 cm. or more long. Flowers up to 8 or 10 cm. wide, solitary, on stout, axillary pedicels, corolla yellow with reddish center, changing to purple with age; capsules depressed-globose, about 2.5 cm. in diameter, seeds 10, hairy.

Tongatapu: seaside thicket near Niutoua village, Feb. 27, 1953, Yuncker 15107.

¹ /*Hibiscus schizopetalus* -- Analyst/
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Tongatapu: Nelson.

'Eua: Lister; in thicket at margin of forest near center of island, Mar. 19, 1953, Yuncker 15341.

Nomuka: in thicket on seaward side of road encircling island, Apr. 30, 1953, Yuncker 15822.

Lifuka: in thicket along road between Pangai village and southern end of village, Apr. 28, 1953, Yuncker 15782.

Kao: in opening of slope forest, between rocks, May 6, 1953, Yuncker 15939.

Vava'u: Crosby; on upper rim of seaside cliff northeast of Leimatua on northern side of island, May 20, 1953, Yuncker 16066.

Frequent throughout Tonga. Endemic.

Tongan name: *lala vao*.

An extract of the root is used as a physic.

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FAMILY PUNICACEAE

Genus *Punica* Linnaeus

Punica granatum Linnaeus, Sp. Pl. 472, 1753.

Shrub up to about 2 m. tall, branchlets often spinelike at tip. Leaves opposite, entire, mostly elliptic or oblong, up to 8 cm. long and 1.5 cm. wide, glabrous, obtuse or acutish, base wedge-shaped, petiole short, winged. Flowers axillary, showy, 3-4 cm. wide, petals scarlet, stamens numerous; fruit up to 6 cm. or more thick, very juicy, edible, rind leathery.

Introduced and occasional in villages. A native of Persia, now widely cultivated as an ornamental and for its refreshing fruit.

Tongan name: *pomikanite*.

FAMILY BARRINGTONIACEAE

Genus *Barringtonia* Forster

Barringtonia asiatica (Linnaeus) Kurz, Asiatic Soc. Bengal, Jour. 45(2): 131, 1876.

Large, round-topped tree, up to 8 m. or more tall. Leaves alternate, clustered toward ends of branches, obovate, apex rounded, base wedge-shaped, entire, up to about 30 cm. long, somewhat coriaceous, sessile or subsessile on very short petioles. Flowers large, calyx commonly two-parted, sepals concave, obtuse, persistent on fruit, corolla four-parted, white, early deciduous, stamens numerous, pink and white, on pedicels up to 3 cm. or more long, in terminal, racemose clusters; fruit four-angular, pyramidal, about 8 cm. long, fibrous, buoyant, seed large.

Tongatapu: Forster; Mosley; near Ha'akame village, Mar. 12, 1953, Yuncker 15285.

'Eua: in open forest on terrace, seaward side of coastal cliff, along trail down to Lokupo, Mar. 27, 1953, Yuncker 15539.

1 / *Wikstroemia rotundifolia* -- Analyst/

Yuncker—Plants of Tonga

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cm. wide, petioles 1-2 cm. long, narrowly ridged by decurrent blade margins, stipules connate. Flowers white, in a globose, fleshy, headlike, pedunculate, axillary cluster; fruit globose-ovoid, about the size of an egg, fleshy and yellowish white when mature. 137

Tongatapu: *Forster*; in thicket near Vaini village, Feb. 26, 1953, *Yuncker* 15037, 15038.

'Eua: *Lister*; in open forest near center of island, Mar. 19, 1953, *Yuncker* 15367.

Lifuka: clearing near east side of island, along cross-island road between Pangai and eastern coast, Apr. 27, 1953, *Yuncker* 15756.

Vava'u: *Crosby*; along trail to summit of Talau, west of Neiafu, May 23, 1953, *Yuncker* 16146.

Common in thickets at lower altitudes throughout Tonga. From India through Malaya to Polynesia.

Tongan name: *nonu*.

The roots furnish a dye; the leaves are used as a remedy for boils; and various parts of the plant are used in medicines.

Morinda umbellata Linnaeus var. *forsteri* (Seemann) Fosberg, in Smith, *Sargentia*: 1: 123, 1942.

Stout, woody vine. Leaves opposite, elliptic, acute to acuminate, base acute, up to 8 cm. or more long and 4 cm. wide, somewhat coriaceous, pinnately nerved, lateral nerves submarginally loop-connected, petiole 1-1.5 cm. long, narrowly laterally ridged by the decurrent blade margins. Flowers white, in a fleshy, pedunculate, axillary, globose, headlike cluster; fruit globose-ovoid, less than 1 cm. in diameter.

Tongatapu: *Home*.

'Eua: *Lister*; in thicket along trail to summit of eastern ridge, Mar. 30, 1953, *Yuncker* 15553.

Kao: climbing in open forest on steep rocky slope, May 6, 1953, *Yuncker* 15894, 15895.

Vava'u: *Crosby*.

Occasional in forested area. New Hebrides, Fiji, Polynesia.

Genus *Borreria* G. F. W. Meyer

Borreria laevis (Lamarck) Grisebach, K. Ges. Wiss. Goet., Abh. 7: 231, 1857.

Low, branching, ascending plant, slightly woody at the base. Leaves opposite, elliptic-lanceolate, sharply acuminate, base cuneate, mostly 2-4 cm. long and 5 mm. wide, pinnately nerved, nerves prominent, subsessile, stipules connate, with filamentous processes. Flowers small, white, in verticillate, axillary clusters.

Tongatapu: frequent in calcareous soil near sea, Sopu, west of Nuku'alofa, Feb. 25, 1953, *Yuncker* 15007.

'Eua: in pastured area near center of island, Mar. 22, 1953, *Yuncker* 15428.

Rather frequent as a weed in waste areas and clearings throughout Tonga. A tropical American species now widespread in tropical countries.

1 / *Morinda citrifolia* -- Analyst/

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Yuncker—Plants of Tonga

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'Eua: forming a thicket along strand just above high-tide limit, Lokupo, 137
Mar. 27, 1953, Yuncker 15535.

Lifuka: in thicket, strand, north of Pangai village, Apr. 26, 1953, Yuncker 15739.

Vava'u: upper rim of coastal limestone cliff above Leimatua, May 25, 1953, Yuncker 16080.

Niufo'ou: in thicket, summit of main crater rim, May 16, 1953, Yuncker 16016.

Common throughout Tonga along the strand (fig. 16). From India to Australia and Polynesia.

S. kocnigii Vahl in Hemslay's list.

Tongan names: *ngahu*, *ngahu molemole*.

The bark is used medicinally "to cure a leprosy-like disease and ringworm."

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Scaevola frutescens var. *sericea* (Forster) Merrill, Philippine Jour. Sci. 7C: 354, 1912.

All parts of the plant densely silky pubescent.

Vava'u: along upper rim of seaside limestone cliff above Leimatua, May 20, 1953, Yuncker 16077.

Niufo'ou: on upper rim of main crater, in thicket May 16, 1953, Yuncker 16014.

Occasional. Philippines to Polynesia.

Scaevola porrecta A. C. Smith, sp. nov. (fig. 17).

Herba suffruticosa porrecta ut videtur pauciramosa, ramulis teretibus pilis 1-2 mm. longis pallidis molliter vestitis; foliis alternatis, petiolis 1-2 cm. longis ut ramulis pilosis ad basin ampliata anguste alatis, laminis in sicco subcoriaceis (in vivo forsan carnosis) fusco-olivaceis elliptico-lanceolatis, 4-6 (-7) cm. longis, 1.2-2.5 (-3) cm. latis, basi longe attenuatis et in petiolum decurrentibus, apice callosa-acutis, margine manifeste crenato-serratis (dentibus 2-3 per centimetrum callosis), utrinque pilis pallidis mollibus circiter 1 mm. longis adpressis ornatis, costa supra subplana subtus elevata, nervis aliis immersis; floribus in axillis bractearum solitariis sessilibus in spicis terminalibus laxis paucifloris 2-4.5 cm. longis dispositis, bracteis foliaceis oblongis apice obtusis callosis utrinque pilosis, maximis ad 20 mm. longis et 6 mm. latis, superioribus minoribus, bracteis lateralibus similibus lanceolatis ad 8×1.5 mm.; calyce pilis numerosis pallidis 4-5 mm. longis basi circumdato, tubo ellipsoideo glabro saepe ruguloso 2-3 mm. longo 1.5-2 mm. lato, limbo erecto plerumque 0.5-1 mm. longo, lobis 5 praeter marginem ciliatum glabris plerumque parvis inconspicuis ad 0.5 mm. longis, lobo unico interdum lanceolato acuto ad 2.5 mm. longo; ovario biloculari, ovulis in quoque loculo solitariis; corolla alba membranacea 16-18 mm. longa, tubo utrinque inconspicue piloso intus faucibus setis deflexis 0.7-1 mm. longis paucis diffuse capitellatis obsito, lobis quam tubo paulo longioribus ovato-lanceolatis alis inclusis 2.5-3.5 mm. latis apice callosa-brevi-acuminatis utrinque glabris vel extus parce pilosis, alis membranaceis undulatis circiter 1 mm. latis; staminibus glabris, filamentis gracilibus 3.5-5 mm. longis, antheris oblongo-ellipsoideis 1.3-1.7 mm. longis; stylo gracili circiter 9 mm. longo copiose breviter piloso apice curvato incrassato, indusio membranaceo circiter 2 mm. diametro minute ciliolato, stigmate late cuneato complanato truncato; fructibus non visis.

1 / *Scaevola frutescens* -- Analyst/

77: Whitcombe

OU9 Tonga OU9

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[For a list of Tongan words on disease and medicine, see Category 192,
pp. 14-19.]

Whitcombe—Notes on Tongan Ethnology

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- NIU UT, NIU MEA. A clay-colored nut.
 NIU MATA KULA. A red-eyed nut, used as a medicine for gum boils.
 NIU MEALAVA. A green nut, used as a medicine for gum boils in young children. The husk at the top of the nut is grated and spread over the boil. 245
824
[757]
 NIU KAPAKALA. A great favorite among the chiefs, because of its perfect shape and size. The milk has a delicious flavor. [272]
[415]
 NIU VAL. The largest coconut obtained in the South Seas. In the early days these shells were used for carrying water and when thus used were termed *hohoni*.
 NIU TAU'KAVE. Has a small fruit.
 NIU TEA. A white nut.
 NIU UTOGAU. A nut with a sweet husk which the natives chew like sugar cane. [262]
 NIU LEKA. This tree grows to a height of only ten feet and has a dwarf nut.
 NIU KULA. A very different variety of coconut from all the others on the island. The nut is the size of a man's thumb; it has no milk, but a lump of white jelly surrounded by a thin, white, bitter skin. The tree is tall with a smooth body.

GAMES PLAYED BY CHILDREN

In the game, *kamotu'u*, several boys sit forming a ring; one goes to the center, closes his eyes, and stands looking upward until a boy from the circle touches him on the foot or leg. He then opens his eyes and goes to each boy in the circle, snapping his fingers in the face of each. When his fingers snap the loudest he has found the boy who touched him. 857
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In *galigali a toke*, the boys stand in a row with hands on each other's hips. One player stands alone, facing the line. When the game begins, the line of boys starts running in a ring, and the lone player (*ell*), tries to catch any boy behind the leader of the line. While the game is being played this song is sung: "Galigali a toki, tuki be he ulu e toke." (Looks like an *ell* trap, but punch the *ell* on the head).

To play *tonuhuhu*, the boys hang a shaddock (*moli toga*) to a tree or stick and stand around it with sharpened sticks in their hands. One boy pierces the fruit with his stick, and strikes it to start it spinning around. The other boys then try to spear it while it is spinning, and the one who accomplishes this first wins the game.

Another game for boys is *tafan*. This is played with native bows and arrows. The weapon is made by taking a *kaho* stick about a yard long, splitting it down about twelve inches, and twisting one end of a piece of *fau* bark around the stick at the place where the split stops. The other end of the *fau* bark is held in the hand. The *kaho* stick or arrow is swung over the shoulder in playing, very much as if one

173 from the village of Bea. When they reached Bea they found that the
425 report was only too true: Muliki Haamea was indeed dead.

Togalava and his friend then went in search of the murdered chief's body and they found it on the rock, Nukualofa. The murderers, before returning to Hihifo, had arrayed the body in its coronation robes, namely; the beautiful fine mats that the young chief was taking with him and that were to be worn by him when he was to be declared Tui Haamea, and to have his first kava under his new title.

On finding the body Togalava first bathed in the sea, and then sprang on to the rock and took all the mats off the dead body, and handed them to the other young man to carry. Togalava then put the body of the dead chief over his shoulders and carried it back to the village of Haateiho, a distance of about twenty miles, from the rock where they found it. When they got to Haateiho they built a bier on which the dead chief was placed and then brought to the village of Tatakamotoga, Mua, by five strong bearers—a farther distance of eight miles. When they arrived at Tatakamotoga a *tolia*
173 (house in which native chiefs are laid out to await the grave or vault
425 being prepared) was built. This *tolia* was built just under the big
764 *kau* tree on the government reserve at Tatakamotoga. The body was lying in state there while the *lagi*, known as Loamanu, was being built. It took six months to build this *lagi*. When all was ready, the funeral took place.

173 After the funeral had taken place the chiefs Macaliuaki and Fatea
425 with Tugi's chiefs [this would be Tugi I, as Tugi II is at present Prince Consort and Premier of Tonga] came to the man Togalava and said to him, "What is the value of the work which you have done for us," and Togalava replied, "Do not trouble," and they replied, "Here is the property of the late Muliki Haamea known as Toutai, and Tatai, also Toutai II. These are yours and to be your successors' properties for ever."

PLANTS USED IN THE TREATMENT OF DISEASE

824 Akataha, Tava, Fekika vao. For fever, stiffness of the jaws, or fixed eyes
278 in children. The trunks of the three trees are scraped and their juices
mixed.

757 Akau vell. For bee sting. The plant is rubbed over the affected part.

192 Bata, Kanume. For *araga*. The trunks of the two trees are scraped to obtain the juice, which is used as a drink.

Bolo. For *sefulai* or *kulokula ohu afi*. The leaves are chewed and the juice is painted over the affected parts.

- Bolo toga.** For elephantiasis (*kulokula*). The leaves are pounded and the juice extracted to make a drink.
- Bua.** For trouble connected with the afterbirth. (See *manoun*.)
- Ega.** For sores on children. Used as a drink. (See *magele*.)
- Fa, Fala.** An emetic. The ends of the young shoots that hang downward are cut off and the juice extracted.
- Fekika.** To induce vomiting. For dysentery (*tuututoto*). (See *tara*.)
- Fekika vao.** For bee sting. (See *akataha*.)
- Fiji uli, Hailala.** For sore eyes (*tului tuhui oe mata che tevelo*; eye that has been pierced by the devil's finger). The leaves of the two plants are chewed together and the juice dropped into the eyes.
- Fiki.** For pain in the stomach (*laga oe kete*). The leaves are pounded and the juice extracted.
- Fuekula.** For constipation. The oil is extracted from the plant.
- Gatae.** Remedy for stomach pains and for *faka avaga* (one possessed of the evil spirit). The plant is pounded to extract the juice.
- Hehea.** For boils (*helaakilagi*). The stems or scrapings from the trunk are chewed and painted over the boil. For rheumatism (*feji che tevelo*) and *faka avaga* (one possessed of the evil spirit). (See *noun*.) For indigestion (*makehekehe*).
- Hailala.** For boils (*hagatamaki*). For sore eyes. (See *fiji uli*.)
- Hiapo kula.** For diarrhoea in small children. (See *hogohogo*.)
- Hogohogo.** For blindness.
- Hogohogo, Hiapo kula.** For diarrhoea in small children. The roots of the *hiapo kula* and the leaves of the *hogohogo* are used.
- Ifi.** For infants who are restless in their sleep. The bark of the tree is chewed and juice sprayed over the child's body.
- For an injury to the eye. The bark or small branches of the tree are pounded and the juice extracted is then dropped into the eye.
- For blindness. The trunk of the *ifi* (horse-chestnut tree) is scraped and beaten to extract the juice.
- Jiaine.** For the illness of newborn infants. The juice of young green bananas (*jiaine*) is given the child, followed by a warm bath in which are placed *tavahi* leaves. [954]
- Kanuma.** For *avaga*. (See *bata*.)
- Kava.** For stomach complaint.
- Kava lnu.** For a boil termed *tae moe laavetela* which causes the body, or affected part, to look sunburned. The juice is extracted from the leaves of the drinking kava plant and painted on the affected part.
- Kavakava ulle.** For elephantiasis (*kulokula*). The leaves are minced and spread with the juice over the affected parts.
- For boils which affect the whole body. (See *malolo*.)
- Kili mlo.** Tonic for upset stomach or loss of appetite. (See *leki leki*.)
- Lagakali.** Remedy for a pain in the side.
- Lautolu.** For one who has suffered a relapse.
- Lautolu, Tono.** For *faka avaga*. The leaves from the two trees are pounded together.
- Leki leki, Kili mlo.** Tonic for upset stomach or loss of appetite. The bark of both trees is pounded together and the juice used as a drink.
- Lou fuji.** For sores of children. (See *magele*.)
- Lou lau tolu uta.** For *faka avaga*. The leaves are pounded to make the medicine.

278
757
824
192

- 278 Magele, Lou fuji, Ega. For sores on a child. The bark is removed from the roots of the *magele* plant, the *fuji* (banana) leaves are pounded, and the *ega* (turmeric) added; all are mixed with water and given to father, mother, and child to drink.
- 757 824 192 Malolo. For a boil termed *matai ika* (fish eye) on the hand or leg. The leaves of the plant are chewed or pounded to a pulp and the juice painted on the boil.
For swelling in the neck (*kia tolo*).
For elephantiasis (*kulokula*). The juice obtained from chewing the leaves is applied to the affected parts.
For stomach pains and for *faka avaga*.
- Malolo, Kavakava ulie. For boils which affect the whole body. The leaves from the *malolo* and the young shoots of the *kavakava ulie* are chewed or pounded together and the juice painted over the body.
- Mamolo. For fever, stiffness of the jaws, or fixed eyes in children. The trunk is scraped and the juice extracted for a drink.
- Manonu. For *faka avaga*. The trunk of the tree is scraped and the juice used as a drink.
- [844] For women who are long in labor and can not give quick delivery.
- Manonu, Bua. For trouble connected with the afterbirth. Both plants are used.
- Mapa. For a boil termed *helaakilagi*. The young shoots of the plants are chewed and juice painted over the boils.
- Milo. For *buhi bala*. The trunk is scraped to extract a juice for making children vomit.
- Milo i tahi, Tono. For dysentery (*tuntutoto*). The juice from the two plants is mixed and taken internally.
- Mohokol. For stomach complaint in old people.
- Moll. For toothache. The bark is chewed.
- Moll toga. For dysentery. (See *tava*.)
- Monomono. For upset stomach. The trunk of the tree is scraped and the scrapings pounded with the fruit of the same tree to make a medicine termed *vai bala*.
- Moosipo. For injury caused by poisonous fish (*nofu*). The leaves are pounded or chewed and the juice rubbed on the affected parts.
- Niu Mea Alava. For *ila* (rash that appears on children). The nut of this tree is husked and the juice obtained from the husk is used as a medicine.
- Nonu. For pains in the stomach. The young twigs of the plant are grated or chewed and juice painted over the stomach.
- Nonu, Hehea. For rheumatism (*feji ehe tevolo*) and *faka avaga* (one possessed of the evil spirit). The young leaves of the two plants are gathered and chewed together to make a medicine.
- Ovava. For *tabitobito*.
- Slale. For *avaga*. The trunk is scraped and the juice extracted.
- Sipl. For fits (*teia*). The vine is scraped and the juice extracted.
- Tava. For sore mouth in children. The trunk is scraped and the juice extracted to use as an external application.
For fever, stiffness of the jaws, on fixed eyes in children. (See *akataha*.)
- Tava, Moll toga, Fekika. For dysentery (*tuntutoto*). The trunks of these three trees are scraped to procure the juice, which is used as a drink.
- Teebiloamaul. For stitch in the side, or shortness of breath (*uauuau*).

- Toa.** An emetic. The trunk of the tree is scraped and the juice extracted from the pulp. 278
The trunk of the tree is scraped and roasted to make *rai pala* (a medicine). 757
- Tol.** For *faka avaga* (one possessed of the evil spirit). The trunk of the tree is scraped to obtain the juice. 824
192
- Tono.** For dysentery (*tuntuntoto*). (See *milo i tahi*.)
- For *faka avaga*. (See *lantolu*.)
- Toto.** For children with fever, stiffness of jaws, or fixed eyes. The trunk of the tree is scraped and pounded to extract the juice for a drink.
- Toume.** For wounded eyes. The dried sheath of the coconut flower (*toume*) is lighted and held by the native doctor. The patient is told to gaze into a coconut shell filled with sea water until he sees the reflection of the burning *toume* held above. As soon as he sees this reflection the doctor plunges the *toume* into the water and the eye is cured. [755]
- Tutu'ull.** Tonic or remedy for a relapse in any illness. The leaves are pounded to extract the juice.
- Uhi.** For boils (*hagatamaki*). This remedy is used for a special type of boil (*mole fua*) which does not come to a head. The plant is mixed with oil and painted on the boil.
- For stomach pains (*haga tamaki*), also for toothache and gumboils. The plant is grated or pounded.

WORDS USED IN DESCRIBING THE HUMAN BODY

Ahu: gall.	Geejivae: toenails.	826
Aofinima: palm of the hand.	Gutu: mouth.	192
Aofivae: sole of the foot.	Halakava: beard.	
Ate: liver.	Hi: semen.	
Atebili: spleen.	Hilligaumoji: upper lip.	
Ateivae: calf of the leg.	Hilo: anus.	
Avaiihu: nostril.	Hiviivae: shin: fore part of the leg.	
Bali: pubes.	Huhu: breasts.	
Bito: navel.	Hui: bone.	
Bule: pit of the stomach.	Huibalalulu: rib bone.	
Bulobulaivae: ankle joint; bottom of the toes.	Huifohe: shoulder blades.	
Ekenaki: voice.	Huikouahe: cheek bone.	
Elelo: tongue.	Ifo: taste.	
Faefine: armpit.	Ihu: nose.	
Faimanava: stomach.	Jino: body.	
Fajitua: loins.	Kakano: flesh.	
Fatafata: breast; chest.	Kalava: vein; blood vessel.	
Fatu: abdomen.	Kanoimata: eyeball.	
Fofoga: head; face (applied to chiefs).	Kanoimatauli: pupil of the eye.	
Fogafoga: appearance; head and face.	Kauinima: fingers.	
Fulufulu: hair.	Kauvae: legs and feet.	
Gaajinima: finger nails.	Kemo: eyebrow.	
Gaajivae: toenails.	Kete: belly.	
Gakau: entrails.	Kia: neck.	
Gao: double teeth.	Kiaivae: hollow of the leg under the knee.	
Geejinima: finger nails.	Kili: skin.	
	Kofuua: kidneys.	

101 square miles. Nuku'alofa, with an approxi-
162 mate population of 15,000, is the largest city
in Tonga and the capital (14).

II. A Review of Medical Practices in Tonga

175 A fairly detailed description of medical
114 practices in Tonga is found in *William
177 Mariner's Account of the Natives of the
Tonga Islands* (17, pp. 240-273). This
account was related to J. Martin by William
Mariner, who was shipwrecked somewhere
in the archipelago in the early 1800's. The
first Europeans to arrive in Tonga were
missionaries sent out by the London Mis-
sionary Society in 1797.

757 Martin reports that around the year 1800
[753] few plants were used in treating illness.
Sickness was thought to originate from an
outside force, and all remedies used by the
Tongan were reasonably categorized by
Martin into three groups: invocation, sac-
rifice, and external operations. When plant
remedies were employed, they had no effect
either upon the disease or the patient.
Martin states that such remedies were held
in "little esteem," for when the reigning
king's daughter became seriously ill plant
medicines were not considered (17).

752 Martin does refer, however, to the uses
278 of three plants. To reduce ophthalmic inflam-
mations, the juice of the *vi* (*Spondias dulcis*)
was used. Following circumcision, the end
of the penis was wrapped in the leaf of
gnata'i (*Erythrina* spp.?). And the ulcerated
sores of venereal diseases were treated with
powder of turmeric from the fleshy rootstock
of *Curcuma longa*.

757 Martin states that "the idea of giving
177 (plant) infusions was first taken from the
natives of the Fiji Islands." The Tongan
177 also learned the practice of surgery in Fiji,
where constant wars afforded great oppor-
752 tunities for practicing this art. The three
most important operations then practiced in
Tonga were *cawso*, or paracentesis thoracis
(drainage of fluid from the chest cavity);
tocolosi, or an operation to cure tetanus; and
broca, or castration.

755 Charms and amulets were not employed
[782] in ceremonies for the patient. Sacrifices
were common, and horrors such as *tootoo-*

755 nima and nauwla, the cutting off of fingers
782 and the strangling of children, respectively,
were frequently employed when a noble lay
seriously ill.

● 757 A story related by Martin gives insight
into the attitude of one Tongan man toward
disease. During an apparent conflict be-
tween a visiting Hawaiian and a Tongan,
both of whom had offered to cure Mr.
Mariner of "a disordered state of the stom-
ach and bowels attended with headache and
drowsiness," the Tongan laughed at the
Hawaiian's infusion made of unnamed leaves
and roots, which was said to be powerful
enough to kill a man if taken in a large dose.

To the Tongan, the idea of curing a sick
man by means that would make a healthy
man sick was absurd. He offered instead to
let some of Mr. Mariner's blood by scarifying
his arms and legs with shells.

The Hawaiian, to prove his own faith in
the plant decoction, imbibed a dose equal
to that prescribed for the sick man. Mr.
Mariner followed the example and was well
the following morning.

757 Apparently, then, the use of plants in
278 medicines must have flourished in Tonga
178 sometime after Martin's report in 1817.

743 Today the use of plants in medicines is
vanishing. There are hospitals in each of
the main island groups and dispensaries
located in several towns. A new hospital
with modern surgical facilities is near com-
757 pletion on Tongatapu. There are many
278 people, however, who still carry the knowl-
edge and use plant cures, but mainly for
treating minor problems.

759 One revered practitioner (Uia) refers his
757 patients to the Government Hospital or the
Catholic Sisters if they are suffering from
what he thinks is a "European" illness. He
discerns the origin of a disease by "touching
the patient in the body and face" and re-
frains from treating illnesses that originate
outside of Tonga.

757 One woman practitioner was called upon
to prepare a remedy for a patient only after
the woman—suffering from a serious fun-
gal infection on her hands and arms—
had visited the dispensary six times. Oint-
ments given to this patient by the local dis-
pensary proved ineffective. It was learned
through Mumui Tatola that the six different

● 757 ointments prescribed were of an antibac-
terial nature. Only an antifungal antibiotic
would have worked in this case. After
[278] treatment with the plant remedy (a concoction of the leaves of *Solanum uporo*, *Evodia hortensis*, and *Capsicum frutescens*), the patient reported that she was able to sleep, no longer kept awake by pain.

Collocott (7) believes that diagnosis proceeds by a series of trials with different medicines. He reports that one cure after another is tried until one is found that works, or until the patient dies. As in Fiji, different practitioners have their own special cures. For each of them the etiology of a disease is unimportant. What matters is knowing if a certain condition is one they can cure (23). Each practitioner is highly specialized and may treat illnesses associated with only one body system. Some practitioners will treat all illnesses but are specialized in that they treat only children or the aged. I did not encounter any practitioner who diagnosed a complaint through communications with the supernatural world.

[755] There is one reference in the literature, however, which indicates that there is some belief in the psychological causation of certain diseases. Churchward's dictionary of the Tongan language defines the word *sau-sau* as a bundle of leaves buried near a tree and believed to cause sickness to anyone taking fruit from the tree. The word *fula* is defined as a swelling caused by breaking a *tapu* (a cultural restriction), especially by eating a chief's leftover food (6).

278 Few plants are cultivated specifically for
249 their medicinal value, and many useful
species are found growing in villages. Most
278 medicinal plants are collected in "the bush"
314 or near the sea. There do not appear to be
any special harvesting techniques and the
leaves, bark, and roots are taken from any
plant of the required species.

278 Most medicines are prepared in the form
of infusions. Generally, a handful of the
required plant part is wrapped in a clean
white cloth or the stipule of *Cocos nucifera*
and squeezed five or six times in a half
[757] coconut shell of fresh water. The resulting
filtrate is taken usually once daily until the
patient responds to treatment. In all cases
where stem or root bark is used, the cork

278 layer, which might contain foreign matter, is removed by scraping. The inner bark is then removed and utilized in medicines.

An important ingredient in many plant remedies is "Tongan oil." This is prepared by pounding together the endocarp of the nuts of *Aleurites moluccana* with the leaves or flowers of *Melastoma denticulatum*, *Decaspermum fruticosum*, *Cinnamomum* spp., and *Coleus amboinicus*. Into the mixture is added the oil of grated coconut flesh, and the intermediate product is allowed to set overnight. The following day the mass is kneaded and pressed against a sheet of corrugated iron, and the "Tongan oil" flows off the sheet into a waiting basin. Fragments of plant parts are strained out through a piece of tapa cloth, and the remaining mixture is left in the sun to evaporate the moisture. The oil is then poured into glass bottles stopped with tapa and stored until ready for use. (15). Massaging accompanies most remedies, and the oil is usually used for this massaging.

757 Illnesses have been categorized into three divisions by Collocott (7). One large group is characterized by illnesses thought to be caused by ghosts of deceased relatives. The second group comprises disorders such as broken bones or sprains which are called *fasi* and are usually treated by massage. The third class is composed of skin disorders and include boils, ulcers, rashes, and tumors. This class is known in Tonga as *hangatamaki*.

276 Several questions pertaining to folk medicine in Tonga remain unanswered. Why is there no record present or past of the employment of hallucinogenic or narcotic plants by the Tongan in his medical or religious rites? Has there been less need for these agents than in many areas of South America and Asia? Have these Pacific islanders been less inquisitive about their flora? There are

137 several plants used as psychomimetics or narcotics in other parts of the world that are found in Tonga: *Datura stramonium* L. (5), *Capsicum* sp. (26), *Solanum nigrum* L. (21), and a few species contain ergoline alkaloids capable of producing psychomimetic reactions. The plants include *Ipomoea pes-caprae* (L.) Sweet, *Argyrea nervosa* (Burm. f.) Bojer, and *Stictocardia tilifolia* (Desrou.) Hallier.² Barrau (2) reports *Zingiber*

278 being chewed are applied to serious wounds.
[752] The sap from leaves heated over a fire is
[757] valued in treating tetanus.

ANACARDIACEAE
(Mango Family)

278
137 RHUS TAITENSIS Guill.
tavihi

This tree is found throughout Tonga and ranges from the Philippines to Polynesia.

278 In Tahiti the plant is used as an anti-diarrheic but is considered a dangerous
[171] medicine (19).

In Tonga it is reported that the leaves are employed in medicines (32).

278 SPONDIAS DULCIS Parkinson
137 vi

This tree, occasional in Tongan villages, is a native of Malaysia. It is an aboriginal introduction to Polynesia.

278 In Tahiti parts of the plant are made into a fermented drink that is valued as an anti-diarrheic (19). In the Philippines it is
[171] reported that the fruit is used in treating dysentery (21).

278 An extract of the bark is considered
[757] efficacious in treating diarrhea in Tonga.

ANNONACEAE

(Custard-Apple Family)

278
137 ANNONA MURICATA L.
apele

Originally from tropical America but now cultivated in many tropical countries, this small tree is occasional in Tongan villages.

278 In the Philippines the ripe fruit is thought
[171] to have antiscorbutic properties and the unripe fruit is employed in treating dysentery (21).

[757] In Tonga the leaves, pounded and prepared in an infusion, are utilized in treating stomach problems.

278 CANANGA ODORATA (Lam.) Hook. f. & Thoms.
137 mohokoi

This species, originally from southern Asia, is cultivated throughout Tonga.

Species of *Cananga* from the Yalu region in New Guinea are said to contain alkaloids (30).

[p. 436-B]

A [Of *Achyranthes aspera* L.--
K Analyst.]

278 In Tonga an infusion of the bark is used
757 for stomach problems, while a remedy com-
posed of the leaves is given to infants suffer-
ing from diarrhea. A concoction containing
the leaves is taken in cases of severe boils.

278 APOCYNACEAE
137 (Periwinkle Family)

CATHARANTHUS ROSEUS (L.) G. Don.

lolic, caleti

This small herb is a frequent ornamental
throughout Tonga. Native to Madagascar,
its distribution is now worldwide. See Wm.
Stearns, Lloydia 29(3).

278 In the Philippines a leaf decoction is used
171 in treating diabetes, while a decoction of the
roots is considered an emmenagogue. In
South Africa a proprietary medicine called
"Covinca" prepared from this plant is em-
ployed as a specific for diabetes (21).

278 It is reported that the plant is valued in
medicine in Tonga (32).

278 ERVATAMIA ORIENTALIS (R. Brown) Turrill
te'ete'emanu

137 This species is occasional in Tonga and
is distributed from Fiji to Samoa and the
Society Islands.

A species of *Ervatamia* from the Yalu and
Laloki regions of New Guinea contains alka-
loids (30).

278 In Tonga the root is grated and an in-
fusion made for treating toothache. The
757 mouthwash is said to be an effective agent
in relieving pain. Koch (15) reports that
this treatment is often replaced by chewing
tobacco (*Nicotiana tabacum* L.).

278 ASCLEPIADACEAE
137 (Milkweed Family)

HOYA AUSTRALIS R. Br.
matolu

This vine is frequently encountered in
forested areas throughout Tonga. It is dis-
tributed from Polynesia and Fiji to the New
Hebrides and Australia.

278 *Hoya australis* is used in many countries
171 for treating wounds (21).

[p. 437-A]

- 278 In Tonga the leaves are pounded and
757 dipped in water to make a lotion for treat-
ing rashes.

CASUARINACEAE

(Casuarina Family)

278

137

CASUARINA EUISETIFOLIA L.

toa

This tall tree is found occasionally through-
out the archipelago. Thought to be native
to Indo-Malaysia and Polynesia, it is now
widely cultivated in most tropical countries.

- 278 In Tahiti an infusion of the bark is taken
171 for nervous disorders (19). In Niue it is
reported that the fruit is used in medicine
(31). In the Philippines an infusion of the
branches is said to be diuretic, while a
decoction of the bark, which contains 18%
tannin (21), is employed as an emmena-
gogue.

- 278 An infusion of the bark of the *toa* tree is
757 taken in Tonga for coughs, ulcers, stomach
ache, and constipation.

COMBRETACEAE

(Terminalia Family)

278

137

TERMINALIA CATAPPA L.

telie

Frequent throughout the archipelago, this
species is distributed from tropical Asia to
Polynesia and is naturalized in America.

- A species of *Terminalia* from the Popon-
detta region of New Guinea contains sapo-
nins (30). In Niue a preparation made from
278 the bark of *T. catappa* is used in treating
171 mouth sores in children (thrush?) (31). In
the Philippines the red leaves are valued as
a vermifuge, the fruit as a purgative, and the
leaves, mixed with oil, are said to relieve
pains of the breast. It is further reported
that a preparation of the bark is utilized
against gastric fevers and as an antidyse-
nteric. The tender leaves have been cooked
with oil from the fruit and employed in the
treatment of leprosy (21).

- 278 In Tonga the bark and young leaves are
757 pounded together and the juices applied to
sores about the tongue and gums. An in-
fusion of the bark is sometimes used in
treating stomach ache.

278

COMPOSITAE
(Composite Family)

137

AGERATUM CONYZOIDES L.

te'ekosi

This herb is common throughout Tonga. Native to South America, it is now distributed pantropically.

278

In the Philippines the leaves are pounded and mixed with salt, the preparation being valued as a vulnerary. The leaves are also cooked in coconut oil and applied to wounds. The plant is used widely in other countries (21).

171

278

In Tonga the leaves are pounded and the juices applied to infected wounds.

752

BIDENS PILOSA L.

278

fis'uli

137

This plant, found throughout Tonga, is distributed widely in tropical countries.

278

In the Philippines flowers of this species are mixed with balls of boiled rice and set to ferment in the manufacture of crude spirits. Usage is reported from Brazil, Mexico, Malaya, Indo-China, and Africa. The leaves are official in the Dutch and Mexican Pharmacopoeias (21).

171

278

In Tonga an infusion of the leaves is valued in treating stomach problems and in cases of food poisoning.

757

WEDELIA BIFLORA (L.) DC.

278

ate

137

This shrub is found along rocky coasts throughout Tonga. It is distributed from Malaya and southern Asia to Polynesia.

278

In the Philippines a decoction of the fresh roots is considered to be diuretic and to act as an emmenagogue. Other usage is reported (21).

[171]

[752]

In Tonga the leaves are pounded between two stones which have been preheated in a fire and the juices applied to serious wounds.

[757]

Koch (15) reports that this remedy is resorted to in cases of tetanus.

278

CONVOLVULACEAE
(Morning-Glory Family)

137

IPOMOEA CONGESTA R. Br.

fue'aepuaka

This vine, frequent in Tonga, is distributed from Formosa to tropical Australia and Polynesia.

278 In Tonga the leaves are crushed and
757 squeezed through a cloth into a cup of water
to prepare a drink for treating filariasis. In
a similar preparation the roots are cut into
small pieces and the resulting drink is taken
as an aperient.

278 EBENACEAE
137 (Ebony Family)

DIOSPYROS FERREA (Willdenow) Bakhuizen
kanume

This tree is found throughout Tonga and
is distributed from India and Ceylon east-
ward to Hawaii.

278 A species of *Diospyros* from the Wau
171 region of New Guinea is reported to contain
steroids (30). In the Philippines the bark
and leaves of *D. ebenaster* Retz. are made
into a blistering plaster (21).

Yuncker (32) reports that in Tonga the
bark is used in preparing medicines.

278 EUPHORBIACEAE
137 (Spurge Family)

GLOCHIDION RAMIFLORUM J. R. & C. Forst.
malolo

This large tree, frequent in Tonga, is
found from the New Hebrides to Samoa.

A species of *Glochidion* from the Lac
Wau, and Nondag regions of New Guinea
is reported to contain saponins (30).

278 From the leaves of this plant the Tongans
make a remedy for food poisoning. The
757 pounded leaves are frequently applied to
boils and a drink prepared from young
leaves has been employed in cases where
infants were suffering from a "furry tongue
accompanied by a sleeping fit."

278 JATROPHA CURCAS L.
137 fiki

This species is frequent throughout Tonga
and is distributed pantropically.

278 In Samoa (12) the juice of this plant is
thought to be effective for treating yaws.
171 In the Philippines the plant has many uses,
the oil from the seeds is the basis of a violet
purgative, a decoction of the leaves is valued
as an antidiarrhetic and as a cough medicine,
and the bark is pounded and applied to
wounds originating from animal bites. Qui-
sumbing (21) reports usage in other coun-

278 tries and states that the leaves are official
[171] in the Mexican and French Pharmacopoeias.
[757] A drink made from the pounded leaves is
employed in Tonga as a cure for stomach
ache.

278 MACARANGA HARVEYANA (Muell. Arg.)
Muell. Arg.
137 *loupata*

This small tree is found in Tonga, Fiji,
Niue, Samoa, and the Society Islands.

278 In Tonga a drink made from the root bark
(cambium layer) is utilized in treating
757 hemorrhoids after pregnancy. A drink from
the boiled bark finds a role in treating con-
stipation. Yunker reports (32) that the
leaves are used for treating stomach ailments
of infants.

278 RICINUS COMMUNIS L.
137 *lepolina*

The castor bean plant is found in waste
areas throughout Tonga and is distributed
pantropically.

The seeds of this plant are the source of
castor oil but they also contain a highly
poisonous substance named ricin. In Samoa
278 it is reported that the oil is employed as a
171 laxative (12). In the Philippines fresh leaves
are applied externally for headache and the
leaves, cooked with milk, are used in poultices
for ulcers. Wide usage is recorded by
Quisumbing (21), who states also that the
leaves and seeds are official in many phar-
macopoeias.

278 In Tonga the juices from pounded bark
757 are applied in cases of skin rashes. A drink
made from the pounded bark is taken for
tumors of the breast and for boils as well.

278 GOODENIACEAE
(Naupaka Family)

137 *SCAEVOLA TACCADA (Mill.) Krause,
probably var. *taccada*
ngahu

This shrub, common throughout Tonga,
is found also from India to Australia and is
widely distributed on Pacific islands.

278 In Fiji a decoction of the roots is used for
171 stomach ache (20). In the Philippines juices
from the ripe fruit are applied locally to

* Specimen lost.

[p. 43A-A]

278 cataracts, the roots are employed in com-
171 battling beriberi, syphilitic infections, and
dysentery. The leaves of this plant are
smoked like tobacco. Usage in other coun-
tries is reported (21).

278 In Tonga the bark is pounded and the
juices applied in treating ringworm.

757

GUTTIFERAE
(Mangosteen Family)

278

CALOPHYLLUM INOPHYLLUM L.

137

feta'u, tamanu

This species occurs frequently near the
sea in Tonga. It is distributed from eastern
Africa and India through Malaya and Poly-
nesia.

278

The oil extracted from the seeds is used
in Samoa in treating rheumatism (12). Qui-
171 sumbing (21) reports that it is poisonous
and that the Samoans use parts of the plant
in preparing an arrow poison. In New
Caledonia the sap is applied to wounds, and
oil from the seeds enters into the preparation
of a digestive aid (10). Natives of the
Philippines value the oil from the seeds and
leaves in treating eye disorders; the oleoresin
is applied to wounds, and an infusion of the
leaves to hemorrhoids. Oleoresin from this
species is official in the Mexican and Spanish
Pharmacopoeias (21).

278

In Tonga the oil is a well-known remedy
for rheumatism (4).

757

GARCINIA SESSILIS (Forst. f.) Seem.

278

heilala

137

This tree, occasional in Tonga, occurs also
in Fiji and Samoa.

In New Guinea a species of *Garcinia* from
the Zenag, Nondugl, and Popondetta regions
contains saponins and other steroids (30).

278

In the Philippines the leaves and bark of
171 *G. mangostana* L. enter into astringent and
febrifuge preparations. The pericarp is used
in curing chronic intestinal catarrh (21).

278

In Tonga this plant is frequently em-
ployed medicinally. The leaves are squeezed
757 in water and applied to skin rashes; a decoction
of young leaves is considered helpful
for stomach ache in children or for infants
suffering from a "sleeping fit." When it is
believed that ghosts have caused hallucina-
tions in a patient an infusion of the leaves
is prepared and administered.

{828
[773]

278 is prepared and administered. The leaves
757 are commonly used for infected eyes (con-
junctivitis): they are chewed and squeezed
through tapa cloth into the affected organ.
This use is also reported by Koch (15).

278 HERNANDIACEAE
137 (Hernandia Family)

CYROCARPUS AMERICANUS Jacq. ssp.
americanus
pukovili

This tree, occasional in Tonga, is distrib-
uted pantropically.

278 Yuncker (32) reports that in Tonga the
757 leaves and bark are esteemed medicinally.
A drink made from the bark is taken for
edema following childbirth and in treating
stomach ache. Koch (15) reports that a
similar preparation is used in cases of fila-
riasis.

278 HERNANDIA MOERENHOUTIANA Guill. ssp.
137 *campanulata* Kubitzki
pipti, pipitui

This large tree occurs throughout the
archipelago and is found from the Society
Islands to Fiji.

278 Yuncker reports that in Niue the flowers
171 are used medicinally (32). In the Philip-
pines the oil from *H. ovigera* L. is employed
as a hair restorer and for dandruff (21).

278 In Tonga the leaves, bark, and flowers
757 are pounded together and applied to boils.

278 LEGUMINOSAE
137 (Bean Family)

CALOPOGONIUM MUCUNOIDES Desv.
fuekala

This species is found occasionally in vil-
lages throughout Tonga.

278 The leaves are used rarely as a cure for
757 filariasis in Tonga.

278 ERYTHRINA VARIEGATA L. var. *orientalis*
137 (L.) Merr.
ngotae

This small tree is frequent throughout
Tonga and occurs from India to Polynesia.

278 In Niue the bark and small twigs are used
171 in medicine (31). The roots and the leaves
are employed in the Philippines as a feb-

278 refuge and it is reported that the bark is a
[171] depressant (8).

278 In Tonga the leaves are pounded and
squeezed through a piece of tapa cloth into
a bowl of cold water. One teaspoonful of
the resulting filtrate is taken to cure convul-
sions in infants. The drink is sometimes
resorted to for stomach ache (15).

278 INOCARPUS EDULIS J. R. & G. Forst.
#i

137 This plant is found throughout Tonga and
occurs from Malaysia to Polynesia.

278 In Tahiti the pounded bark is applied to
bites of poisonous fish (19). In Niue the
137 leaves of *I. jagiferus* are used in medicines
(31).

278 Koch (15) reports that in Tonga the bark
is valued in treating diarrhea in children.

278 PUERARIA LOBATA (Willd.) Ohwi
fue'aepuaka, aka

137 This vine, frequent in Tonga, ranges from
Asia and Malaya to Polynesia.

278 According to Yunker *P. lobata* is used
medicinally (32).

278 VIGNA MARINA (Durm.) Merr.
lautolu tahi

137 This long-trailing pantropical vine is com-
mon on beaches in Tonga.

278 A drink prepared by squeezing the young
leaves through a piece of cloth into a bowl
of water is taken in Tonga to cure "sleeping
fits" in infants. The crushed leaves are
applied to boils, and steam which originates
from the leaves when they are placed in a
basin of boiling water is inhaled to cure

[753] fever and headache. Aches believed to be
caused by ghosts of deceased relatives are
[775] treated by applying the crushed leaves to
the affected part of the body.

278 LILIACEAE
(Lily Family)

137 CORDYLINE TERMINALIS (L.) Kunth.
si

This plant is found throughout Tonga and
is widely distributed in Polynesia.

278 A species of *Cordyline* is used widely in
[171] the Pacific (21).

[757] In Tonga the leaves of *C. terminalis* are

[p. 440-B]

- 278 squeezed into well-water and the liquid is
757 used to cure eye infections. The ripe leaves
are crushed in combination with Tongan oil
and applied to abscesses of the gums.

278 LOGANIACEAE
137 (Strychnine Family)

GENIOSTOMA INSULARE A. C. Sm. & Stone
var. *insulare* f. *insulare*
te'epilo'amaul

- 278 This species is native to Tonga and Fiji.
[171] Hunt (12) reports that members of this
[757] genus are used medicinally in Samoa. A
drink prepared from the bark of *G. insulare*
is valued in Tonga in treating constipation.

278 LORANTHACEAE
137 (Mistletoe Family)

AMYLOTHECA INSULARUM (Gray) Danser
kainikavea, topu'uno

This species is found growing on tree
branches in forests throughout Tonga. It is
found also in Fiji, Samoa, and the Society
Islands.

- 278 The leaves are used in medicine (32).

278 MALVACEAE
137 (Hibiscus Family)

HIBISCUS TILIACEUS L.
fau

This plant is frequent in Tonga and is
distributed pantropically.

- 278 In Tahiti *H. tiliaceus* is reported to be an
171 emmenagogue; its flowers are emollient (19).
In Niue the flowers are used medicinally
(31).

- 278 In Tonga the bark and young leaves are
757 utilized in treating skin disorders (32). The
leaves are chewed and then applied while
the bark is pounded, water added, and the
solution squeezed through a piece of tapa
cloth onto the affected area.

278 THESPIA POPULNEA (L.) Soland. ex Correa
137 milo

This pantropical tree is a frequent shore
plant in Tonga.

- 278 An extract of the fruit is used in Niue as
171 a purge and is applied to swollen testicles
(31). In Tahiti a preparation of the green

278 capsules is employed to alleviate migraine
171 headache, and the yellow latex is applied to
insect-bites (19). In the Philippines a
decoction of the leaves is considered a cure
for itches. Other economic applications are
reported (21).

278 A drink prepared from the ripe leaves and
757 bark is given in Tonga to teething children
856 who run a fever and have an excessive saliva
flow.

URENA LOBATA L.

278 *mo'osipo*

137 This common pantropical weed occurs in
Tonga.

278 In Samoa the leaves are applied locally in
171 filarial swellings (12). The plant is used
in Tahiti as an emmenagogue (19). In the
Philippines a decoction of the root is valued
for colic, the boiled leaves are applied as a
poultice in inflammations of the intestines
and bladder, and a decoction of the roots
and leaves valued as an emollient (21).

278 In Tonga the leaves are squeezed by hand
[752] and poulticed to burns and scalds. An in-
[757] fusion of the roots and leaves is considered
a cure for diarrhea.

MELIACEAE

(Mahogany Family)

278

137 *ACLAIA SALTATORUM* A. C. Sm.
langakali

.. This shrub is found throughout Tonga
and in Fiji and Niue.

278 In the Philippines a decoction of the roots
[171] and leaves of *A. odorata* Lour. is esteemed
as a tonic (21).

In Tonga the bark is employed in medi-
cine.

278 *DYSOXYLUM FORSTERI* (Juss.) C. DC.
137 *mo'ota*

This tree is endemic throughout Tonga.

Species of *Dysoxylum* from several re-
gions of New Guinea proved positive in tests
278 for saponins and other steroids (30). In the
171 Philippines a decoction of the juice of the
fresh bark of *D. decandrum* is used for
coughs (21).

278 The steam from the leaves of this plant
757 (when pressed in a basin of boiling water)
is inhaled in Tonga to cure headache and
reduce fever.

278 XYLOCARPUS GRANATUM Koenig
137 lekileki

This tree is found near mangrove swamps in Tonga and is distributed from India and Ceylon through Malaysia and Polynesia.

278 The bark is said to be astringent and a
171 decoction of the fruit and seeds is used in the Philippines as an antidiarrheic (21).

In Tonga the bark is crushed and boiled in water. One tablespoonful taken three

757 times a day is prescribed for any type of high fever, but especially for fever accompanied by a "black, furry tongue."

278 MORACEAE
137 (Fig Family)

ARTOCARPUS ALTILIS (Parkinson) Fosberg
mei

The breadfruit tree is cultivated throughout the Pacific Islands and in parts of the New World.

278 In Fiji an infusion of the root-bark is
171 utilized in the treatment of internal fractures.

In Tonga an infusion of the bark is used in cases of relapsed illness. Boils are treated with the white gum which exudes when the steam is incised. The boil is then covered with a piece of tapa that has been soaked in Tongan oil. The dressing is changed daily, and the boil washed with sea water until a cure is effected.

278 FICUS OBLIQUA Forst. f.
137 'ovava

This large tree is frequent throughout Tonga, Samoa, and westward to the New Hebrides.

278 An infusion of the leaves is used in Tonga
757 to treat convulsions in infants. An infusion of the pounded bark is employed for treating boils or tumors of the breast. Koch (15) reports that the yellow leaves are chewed and applied to boils.

278 MYRTACEAE
137 (Myrtle Family)

PSIDIUM GUAJAVA L.
kuava

This tropical American tree is rather common in the Pacific Islands.

[p. 442-A]

278 Papy (19) reports that this plant enters
171 into the preparation of an astringent in
Tahiti. In Niue the leaves are considered
"ghost medicine" (31). In the Philippines
the leaves, bark, and roots are employed in
decoction for washing wounds and ulcers.
The bark and leaves reportedly are astring-
gent and antidiarrheic in decoction. Wide
usage in other countries is reported by
Quisumbing (21) who states that the roots
are official in the Mexican Pharmacopoeia
and the leaves official in the Dutch and
Mexican Pharmacopoeias.

278 In Tonga the juice of chewed leaves is
757 swallowed as a treatment for stomach ache.

SYZYGIUM CORYNOCARPUM (A. Gray)

C. Muell.

hehea

278 This small tree is occasional in Tonga and
137 occurs also in Fiji and Samoa.

278 In Tonga the bark represents one compo-
757 nent of a general tonic but more importantly
the chewed leaves appear to be employed
frequently as a topical treatment for tumors
of the breast. This species merits detailed
chemical and pharmacological analysis. (See
VII, Discussion.)^A

278 SYZYGIUM MALACCENSE (L.) Merr. & Perry

137 fekika kai

The mountain apple tree, a native of
India and Malaya, is found on many Pacific
islands.

278 In Tahiti the leaves are utilized in treat-
171 ing bronchitis, and the bark is considered
tonic and astringent (19). The bark is used
in Niue in treating mouth sores in children
(31). An infusion of the bark is taken in
Fiji as a cure for the "flu." Quisumbing (21)
reports wide usage of this plant in other
countries (as a diuretic, for dysentery, as a
mouthwash for thrush, etc.).

278 In Tonga, the bark is valued as a general
757 tonic, and an infusion of the bark is taken
for coughs (15) and to relieve constipation.

NYCTAGINACEAE

(Four O'Clock Family)

278 PISONIA GRANDIS R. Br.

137 pukovai

This tree is occasionally found in Tonga.
It is distributed from the Moluccas through

[p. 442-B]

A[See Category 278, p. 449-B—

^A Analyst.]

278 Bombo, Australia, the Marianas, the Philip-
pines, and Polynesia.

[171] A drink made from an infusion of the
[757] bark is taken in Tonga to treat *fesialoto*, a
term which I am not able to translate.

278 OLEACEAE
137 (Olive Family)

137 JASMINUM SIMPLICIFOLIUM Forst. f.
tutu'uli

This vine, occasional in Tonga, is found
in Australia, the Solomon Islands, the New
Hebrides, Fiji, and Polynesia.

278 Quisumbing (21) reports wide usage of
171 this genus in other countries.

278 In Tonga an infusion of the pounded
171 leaves is valued in treating cases of relapsed
278 illness; an infusion of the bark provides a
757 treatment for jaundice ("person yellow")
and for ulcers. Koch (15) reports that the
leaves are utilized to cure headaches: the
left or right side of the leaf is chosen, accord-
ing to which side of the head is aching, and
then six of them are chewed inside a piece
of fresh tapa cloth until the juices mixed
with saliva flow freely. This liquid is then
dripped into both eyes and nostrils. This
kind of preparation is rare.

278 OXALIDACEAE
137 (Wood Sorrel Family)

137 OXALIS CORNICULATA L.
kihikihi

This small pantropical herb is common
throughout Tonga.

278 In the Philippines the leaves are con-
sidered antiscorbutic and the juice of the
171 leaves is used for cleaning wounds and for
itches. A decoction of the leaves is taken
for fevers and dysentery. It is also reported
by Quisumbing (21) that the fresh juice of
the leaves relieves *Datura* intoxication.

278 An infusion of the leaves is used in Tonga
757 to cure convulsions in infants.

278 PIPERACEAE
137 (Pepper Family)

137 PIPER METHYSTICUM Forst. f.
kava

276 This shrub is found in most Tongan vil-

278
137 lages and is distributed widely throughout
the Pacific Islands.

276 In Samoa (12) the root is used in treating
gonorrhea. In New Caledonia the leaves

278 are chewed to cure bronchitis, and in New
Guinea the plant is taken as a tonic and

171 soporific and is said to be valuable in treat-
ing gonorrhea and inflammations of the

uterus (3). In Fiji the roots are pulverized
and a drink prepared which has sedative

[276] properties. The employment of the roots in
making a drink is widespread in Tonga and

other Pacific Islands; detailed chemical and
pharmacological analysis has been under-

taken and is reviewed by Keller and Klohs
(13).

278 In Tonga, the yellow leaves are sometimes
pounded and an infusion used to soothe cry-

757 ing infants.

278 PIPER PUBERULUM (Benth.) Benth. var.

137 GLABRUM (C. DC.) A. C. Sm.

kavakava'uli

This variety is very common in Tonga and
occurs also in Fiji and Samoa.

278 In Fiji the leaves are chewed until moist
and applied to wounds.

171 In Tonga the inner bark is boiled and the
resulting liquid drunk in cases of filariasis

278 and other inflammations. Boils are com-
monly treated by application of the pounded

757 leaves.

278 POLYPODIACEAE

137 (Common Fern Family)

PHYMATODES SCOLOPENDRIA (Burm.) Ching
laufale

This fern is common in plantations and
waste areas throughout the archipelago. It
is found also in Africa, Australia, Ceylon,
southern China, Madagascar, Malaysia, and
New Zealand.

278 The smoke given off when this plant is
heated over a fire is inhaled in regions of

137 New Guinea to relieve catarrh (27). In
Niue the leaves are used medicinally (31).

278 In Tonga an infusion of the pounded
leaves or bark is prescribed for infants suffer-

757 ing from filariasis. It is considered a promis-
ing sign if this brings out a rash. The

pounded leaves are also applied to boils.

[p. 443-B]

278 In Tahiti this species has antidiarrhetic,
171 febrifugal, and anticholinergic applications
(19).

278 An infusion of the inner bark prepared
with boiling water is esteemed in Tonga as
757 a treatment for epilepsy.

278 MORINDA CITRIFOLIA L.
nonu

137 The Indian mulberry is common in thickets
throughout Tonga and is distributed from
India eastward to Polynesia.

278 In Fiji the fruit is valuable in treating
171 kidney problems (20). In Niue, Yuncker
(31) reports that the bark, leaves, and
flowers are used in medicines. In the Philip-
pines the fruit is used as an emmenagogue,
the sap of the leaves as an antidiarrhetic, and
the fresh leaves are applied to external
ulcers (21). In Samoa the leaves are em-
ployed to cure rheumatism and in cases of
filarial swellings (12).

278 This is one of the most commonly used
757 cures for diarrhea in infants; the crushed
leaves moistened in water are applied to
aching joints or massaged into aching mus-
cles; the fruits are crushed and the juice
dripped onto aching teeth or sore gums; and
the leaves enter into general tonics.

278 TARENNIA SAMBUCINA (Forst. f.) Durand
manonu

137 This species is frequent in Tonga and is
found from Micronesia and New Caledonia
eastward to the Tuamotu Archipelago.

278 In Niue a liniment is made from the fruit
171 (31), while in Fiji this species is considered
a good treatment for rheumatism and swell-
ing of the groin (20).

278 A drink prepared from the boiled bark is
757 taken in Tonga to relieve constipation and
as a general tonic.

278 RUTACEAE
137 (Rue Family)

137 EUODIA HORTENSIS J. R. & G. Forst. f.
SIMPLICIFOLIA (Rechinger) K. Schum.
ex Lauterb.
uhi

This variety is occasional in Tonga and is
widely distributed in the Pacific Islands.

278 Species of *Evodia* from several regions of
171 New Guinea contain alkaloids (30). In Fiji
an infusion of the bark is used as an em-
menagogue, while in Niue the leaves are
chewed to relieve toothache and stomach-
ache (31).

278 An infusion of the leaves is taken in
Tonga as a laxative and to reduce fevers.
757 Crushed leaves mixed with Tongan oil are
applied to sores of the gum, and Koch (15)
reports that the leaves are massaged on ach-
ing heads and employed to cure earache.

SAPINDACEAE
(Soapberry Family)

278
137 *POMETIA PINNATA* J. R. & G. Forst.
tava

This large tree is occasional in Tonga and
is found in Malaya, New Guinea, and Poly-
nesia.

278 In Fiji an infusion of the bark is taken
171 as a diuretic. Species of *Pometia* from the
Yalu and Popondetta regions of New Guinea
contain saponins and other steroids (30).

278 Koch (15) reports that in Tonga an infu-
757 sion of the bark is used to cure diarrhea in
children, while Yuncker (32) states that
the bark is utilized in treating "stomach
troubles." A bark infusion is drunk to treat
serious coughs accompanied by fever, con-
stipation, and it is sometimes applied locally
to diaper rashes.

SOLANACEAE
(Tomato Family)

278
137 *CAPSICUM FRUTESCENS* L.
polo

The pantropical red pepper plant is found
around dwellings in Tonga.

278 The fruit is official in the Argentine,
171 United States, British, and Indian Pharma-
copoeias (21).

278 The fruits of this species enter into many
757 remedies in Tonga, especially for treating
diseases of the skin. The leaves are chewed,
and the juice swallowed as a remedy for
tuberculosis. The juice is applied to the
eyes in cases of mild conjunctivitis. One
remedy for jaundice consists of four fruits
and one handful of bark mixed in one pint
of water. The patient is advised to sip this
solution twice daily until cured.

278 *PHYSALIS ANGULATA* L.
137 *polo pa*

This herb, an occasional weed in Tonga, is distributed widely in warm countries.

278 Yuncker (32) reports that in Tonga the leaves are used medicinally.

278 *PHYSALIS PERUVIANA* L.
137 *ku'usi*

This pantropical species is an occasional plantation weed in Tonga.

278 In Tahiti parts of this plant have diuretic value and are used also in treating abscesses and for conjunctivitis (19). Quisumbing (21) reports usage in other countries.

171 According to Yuncker (32) the leaves are employed in medicine.

278 *SOLANUM UPORO* Dun.
137 *polo tonga*

This plant is occasional in Tonga and occurs also in Tahiti and Rarotonga.

278 Papy (19) reports that in Tahiti the plant is used as a sedative, as a diuretic, for conjunctivitis, and in treating abscesses.

171 A drink made from an infusion of the leaves is used to reduce filarial swellings.

278 The crushed leaves are applied to boils, fungal infections, and tumors of the breast. Because of the wide usage of this plant detailed chemical and pharmacological analysis should be undertaken.

278 **THYMELAEACEAE**
137 (Akia Family)

278 *WIKSTROENIA ROTUNDIFOLIA* (Forst.)
137 Decaisne
lala vao

This species is found in Tonga and Niue.

278 Yuncker (32) reports that in Tonga a physic is prepared from an extract of the root.

278 **TILIACEAE**
137 (Linden Family)

278 *TRIUMFETTA BARTRAMIA* L.
137 *mo'osipo*

The bur bush is frequent throughout Tonga and is found also from Malaya through the Mariana Islands and Polynesia.

278 In the Philippines a decoction of the roots is used for treating intestinal ulcers (21).

[171] In Tonga the leaves are crushed and applied to burns and scalds.

[752]

278
137

ULMACEAE
(Elm Family)

TREMA AMBOINENSIS (Willd.) Bl.
mangele

This tree, occasional in Tonga, is found from South-Eastern China to Australia eastward to Polynesia.

278
[171]

In the Philippines the softwood is pounded and the resulting fluid applied as a poultice to swellings (21).

Yuncker reports that in Tonga the leaves are used medicinally (32).

278
137

TREMA ORIENTALIS (L.) Bl.
mangele

This species is frequent in thickets throughout Tonga and is found in other islands in the Pacific.

278

It is reported that in Tonga the leaves are used in medicine (32).

278
137

UMBELLIFERAE
(Parsley Family)

CENTELLA ASIATICA (L.) Urb.
tono

The Asiatic pennywort is found throughout Tonga and is distributed pantropically.

278
171

Hunt (12) reports that the leaves are used medicinally in Samoa. The plant is used medicinally in Niue (31) and also in the Philippines where the sap from the leaves is applied to wounds and the seeds are used for treating dysentery, fever, and headache. This plant is used widely in other countries; as a tonic, as a hypotensive, and as a circulatory stimulant. The leaves are official in the Dutch, French, Mexican, Spanish, Indian, and Venezuelan Pharmacopoeias (21).

278
757

In Tonga the leaves are used as poultices (32), in tonics, and as an infusion for treating convulsions in infants.

278
137

URTICACEAE
(Nettle Family)

PIPTURUS ARGENTUS (Forst. f.) Wedd. var.
LANOSUS Skott.
olonga, tou

This small tree is frequent on cliffs in Tonga and is also found in Samoa and Rotuma.

278
171

In New Guinea, the plant juices are ap-

[p. 446-A]

278 plied locally to wounds and used for tooth-
171 ache (27). In the Philippines, scrapings
from the bark of *P. arborescens* are applied
to boils (21).

278 In Tonga the bark and leaves are valued
for medicinal purposes (32).

VERBENACEAE
(Verbena Family)

278
137 CLERODENDRUM INERME (L.) Gaertner
tutuhina

This shrub is frequent near the shore in
Tonga and occurs also from India through
Malaya eastward to Polynesia.

278 Hunt (12) reports that the leaves of this
171 species are used in Samoa in treating fevers.
In the Philippines, a decoction of the roots
is taken as a febrifuge and the leaves are
applied as poultices. Quisumbing (21) also
reports other usage. The sailors of Macassar
employed a decoction of freshly pounded
seeds to offset the effects of eating poisonous
seafoods—fish, crabs, etc. (21).

278 An infusion of the pounded bark is drunk
171 in Tonga as a remedy for liver disorders and
in treating ulcers.

278 LANTANA CAMARA var. MIST (L.)
137 L. H. Bailey
talatala

This plant is occasional in Tonga and is
distributed pantropically.

278 In the Philippines a decoction of the fresh
171 roots is gargled to relieve toothache (21).
Diguango (8) reports that the pounded
leaves are used to reduce inflammations and
that a lotion is prepared for treating rheu-
matism. He states also that the active con-
stituent—lantanine—is an alkaloid that acts
like quinine in reducing fever and slowing
circulation.

278 In Tonga, the leaves are chewed until
171 moist and applied to cuts. A variation of
the above treatment consists of warming the
leaves near a fire and then applying the
plant juices directly on the cut or wound.

278 PREMIA TAITENSIS var. BIMATARENSIS
137 F. H. Br.
colovalo

This species is frequent in Tonga and
ranges also from Fiji eastward to the Mar-
quesas.

[P. 446-B]

278 In Tahiti, the leaves are used for treating
171 toothache and neuralgia (19), and in Niue,
they are reportedly esteemed in treating
tuberculosis (31). Hunt (12) reports that
the plant is employed in Samoa.

278 In Tonga, boiling water is poured over
the leaves into a basin and the steam inhaled
757 as a cure for fever and headache. The bark
is boiled and is an ingredient in a general
tonic.

278 ZINGIBERACEAE
137 (Ginger Family)

137 CURCUMA LONGA L.
ango

The turmeric plant, distributed widely in
warm countries, is occasional throughout
Tonga.

278 A decoction of the rhizome is used in
171 treating conjunctivitis (8) and a mixture
of the rhizomes with coconut oil is prepared
as a vulnerary (21) in the Philippines. The
rhizomes are official in numerous pharma-
copoeias.

278 A solution of the rhizome was formerly
844 painted on the mother's body prior to par-
turation as an antiseptic. This practice is no
longer common in Tonga. Ango is presently
386 found in "brick" form. These bricks are
prepared by first removing the outer layer
of the rhizome and then pounding the latter
and adding water. The fine dye grains are
separated from the rough starch grains and
the dye grains dried in the sun until they
have a "creamy" consistency. This mass is
then placed in a bamboo tube and baked in
a Tongan earth oven until dry. The circular
bricks are removed as needed.

278 ZINGIBER ZERUMBET (L.) J. E. Smith
137 angogo

Wild ginger, widely distributed in warm
countries, is frequent in Tonga.

278 In the Philippines, the pulverized rhizome
171 is used as an antidiarrheic (8). Stopp (27)
reports that in New Guinea juice derived
from the rhizome is employed for treating
burns or cuts and that small pieces of the
rhizome in combination with "other plants"
are valued to relieve toothache.

278 Yuncker (32) states that in Tonga the
rhizome has medicinal uses.

[p. 447-A]

125 TABLE IV
SPECIES TESTED FOR ALKALOIDS (ALL NEGATIVE)

Binomial	Plant Part
<i>Annona muricata</i>	leaves
<i>Cananga odorata</i>	leaves
<i>Casuarina equisetifolia</i>	bark
<i>Clerodendrum inerme</i>	bark
<i>Erythrina variegata</i>	leaves
<i>Euodia hortensis</i>	leaves
<i>Ficus obliqua</i>	bark and leaves
<i>Glochidion ramiflorum</i>	bark
<i>Hernandia moerenhoutiana</i>	leaves
<i>Jasminum simplicifolium</i>	bark
<i>Lantana camara</i> var. <i>mista</i>	leaves
<i>Syzygium corynocarpum</i>	leaves
<i>Syzygium malaccense</i>	bark
<i>Tarenna sambucina</i>	bark
<i>Thespesia populnea</i>	leaves

Using both Mayer's and Ecolle's reagents, two separate tests for the presence of alkaloids were completed in the laboratory. The two reagents were chosen because of their variable sensitivities to different kinds of alkaloids.

All tests conducted in the laboratory for the presence of alkaloids in 15 crude drug samples were negative. The species tested are enumerated in Table IV.

VII. Discussion

757 Apparently the Tongan prefers to be treated for serious ailments by doctors in the government hospitals. Plant remedies are employed in emergencies or when "European" medical practices have failed to effect a cure. Tongan folk-medicine is an art practiced mainly by the oldest people. 757 184 Although one or two practitioners encountered on Tongatapu were about 30 years of age; the others were well over 60. 759 Young people generally consider plant medicine a form of superstition and look upon its practice as not really effective, if not actually dangerous. There is no systematic schooling for transmitting these plant remedies from one generation to the next, and for this reason 757 868 I believe that with the passing of one more generation little of this traditional knowledge will survive, except in occasional notebooks stored with other possessions of another age.

[p.448-A]

757 Martin's report on life in Tonga indicates
278 that around the year 1800 few plants were
used in treating illnesses (17). There is no
reason to doubt his observations. However,
the possibility that plants were generally
used in medicines before 1800 must not be
eliminated on the basis of this single report.
171 Evidence from other regions of the Pacific
278 and from ethnographic studies of primitive
757 cultures in general suggests that plants
121 were used in medicines to some extent by
most peoples. By attempting to evaluate the
relative date of introduction to Tonga of the
species enumerated in Section V, perhaps
some conclusion as to the origin of plant
remedies in Tonga can be determined. For
128 this purpose, I have divided the 71 enumerated
medicinal plants into three categories:
endemic, indigenous, and of recent introduction.
For the purposes of this discussion,
"endemic plants" refers to species found only
in the archipelago; "indigenous plants" are
those found generally throughout Polynesia
and of pre-European introduction; and "recently
introduced species" are those from
tropical America, Africa, Asia, or India that
were introduced after Europeans first arrived
in Tonga. Table V lists those species
which are indigenous to Tonga and which
{278} are used in medicines. Table VI lists those
{137} which are used in medicines and which are
considered of recent, or post-European, introduction.

137 Of the species listed above, one is endemic,
278 49 are considered indigenous or of pre-European
introduction to Tonga, and only 21 are of post-European
introduction. Therefore of the total of 71 species
enumerated, 68% are indigenous to Tonga and 30%
are recently introduced. As the majority of
enumerated medicinal plants are native or
174 of pre-European introduction to Tonga and
757 the use of plants in Tonga is assumed to
{177} have flourished after 1800, it is possible to
conclude that the Tongan may have learned
the many plant remedies enumerated herein
from other Pacific islanders and/or from
Europeans who learned of certain plant
remedies in their travels and entered the
archipelago after visiting these other island
groups. It is also possible to conclude that
{114} Martin's (17) observations were, in fact, incorrect
and that medicinal plants were used
000 by Tongans before 1800. Perhaps the Tongans

TABLE VI
MEDICINAL PLANTS OF POST-EUROPEAN
INTRODUCTION TO TONGA

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Achyranthes aspera
Ageratum conyzoides
Annona muricata
Bidens pilosa
Cananga odorata
Capiscum frutescens
Catharanthus roseus
Curcuma longa
Erythrina variegata var. *orientalis*
Jatropha curcas
Lantana camara
Oxalis corniculata
Physalis angulata
Physalis peruviana
Premna amboinensis
Psidium guajava
Pueraria lobata
Richius communis
Triumfetta bartramia
Urena lobata
Wedelia biflora

000 gan did not exhibit these plant remedies out of respect for the foreigner or for fear that the stranger would bring bad luck upon the patient.

128 I do not pretend to have collected all of the plant remedies used in Tonga. One agricultural officer bade me farewell with the remark, "Well, I guess you got about 80% of them."

278 Of the crude drug samples collected, I would suggest that intensive analysis be undertaken for the constituents of *hehea*,
● 757 *Syzygium corynocarpum*. This species was used by three individual practitioners for treating severe boils or tumors of the breast. *Syzygium corynocarpum* was common to all three remedies, while different plants made up each of the other concoctions. *Solanum uporo* is used widely in Tonga, and it may also be worthwhile to analyze.

Regarding my listing of "medicinal plants," it must be remembered that although the individual plants and their uses are listed separately, in many cases remedies are compounded of two or more species. The possibility that activity of some of these remedies

278 is derived in part from synergistic effects
757 between plants must not be overlooked.

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[p. 450-A]

Birth and Death Rates.—Infant Mortality.—Marriages.

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blooded Tongans" have some admixture of foreign blood (mostly European), and there is a danger that the number of these will continue to increase.

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The smallness of the country and the land-laws do not attract Asiatics, and those who have entered the country in recent years are mostly Japanese storekeepers and Indian tailors, saddlers and house-servants.

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BIRTH-RATE. The birth-rate for 1931 was particularly high, 40.9 per 1,000 of the population. The average for the past ten years is 36.95. This may be compared with the average in New Zealand 19.01, Australia 22.19, and Fiji (1927 only) 32.53 per 1,000.

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The illegitimate births, averaged over the past ten years, were 17.32 per cent. of the total number of births. Illegitimacy in Victoria, for example, represents 4.80 per cent.

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DEATH-RATE. Unfortunately, the death-rate is also high, 17.46 per 1,000 of the population in the period 1922-1931 but only 15.40 for the last year. This compares favourably with Fiji (1927 only) 22.98, Japan 21.2 and Italy 16.5 per 1,000, but it far exceeds the rate in some other countries, such as England and Wales 12.2, Australia 9.4 and New Zealand 8.5 per 1,000.

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It is most regrettable that, though native treatment is forbidden by law, it is practised everywhere, even within easy access of Government Medical Officers. Of the 432 deaths registered in 1931, 205 were certified by medical officers, 228 had not been attended; nevertheless, this is better than in 1923, when 178 deaths were certified and 309 not attended. The medical officers are gradually winning the confidence of the people, and the return of qualified Native Medical Practitioners from the Central Medical School, Suva, in 1933 should increase the acceptability of European treatment among the Tongan people.

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Some causes of death in recent years were:—Tuberculosis 23.5% of the certified deaths, typhoid fever 11.1%, pneumonia 10.7%, influenza 1.3%. Malaria is unknown, yaws and filariasis are common but not usually fatal, and leprosy is not common; cases of leprosy are sent to Makogai, Fiji, where there are thirteen Tongan lepers at present.

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Tuberculosis is undoubtedly the scourge of the group. The Medical Department does its utmost especially with incipient cases, but it is recognized that its efforts would be aided if the Tongans would seek treatment and carry it out. Deaths from tuberculosis in Tonga average annually 33 per 10,000 of the population*, as against 17.5 in France, 9.7 in England and Wales, and 5 per 10,000 in New Zealand.

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* (This assumes that the proportion of tuberculosis as the cause of death in the cases of those uncertified was the same as for those certified.)

INFANT MORTALITY. The average number of deaths of infants under 12 months for the last ten-year period stands at the alarming figure of 119.09 per 1,000 births, but for the last five-year period the rate was only 67.7 and 67 in 1931. This may be compared with England and Wales 71, Australia 53, and New Zealand 38 per 1,000 births.

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MARRIAGES. The marriage rate is 10.40 per 1,000 of the population, as compared with 7.92 in Australia. The rate of divorces to marriages in the past ten years has been 1 in 9.05.

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[1841-1850]

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made to the sonorous singing of the *Te Deum* at the marriage of Taufua'ahau's daughter, Salote, to the Tu'i Pelchake in 1839. The District Meeting in 1841, influenced by John Waterhouse and his experience of the Book of Common Prayer in English Wesleyan services, decided that John Wesley's Abridgement of Morning Prayer from the Book of Common Prayer should be translated and should be used in all the large chapels where missionaries could guide the worship. John Thomas was anything but a high churchman or ritualist but he and the other missionaries loyally accepted the ruling.⁽²⁰⁾ The Hymn-book of 1849 had 189 hymns, the Morning Prayer service, and also the catechism. In the 1853 edition the Litany and Collects occupied 40 pages and the catechism 72 pages.

Lawry, in his 1850 visit, commented upon the worship in Zion, Nuku'alofa:

"The serious devotional tone of this host of worshippers would bear a comparison with any congregation I ever saw in England. . . . The beautiful harmony with which they went through the responses in the Morning Service was very affecting, in tones like the sound of many waters. . . . Both the singing and the praying were performed by the entire congregation." ⁽²⁰⁾

A visiting Anglican physician, Dr. W. H. Harvey, of Trinity College, Dublin, made particular reference to the Tongan Wesleyans' use

"of our noble Liturgy which we always use in the chapel service".⁽²¹⁾

It was this doctor who was so impressed with the need for more support for medical work that he instituted a Protestant Medical Aid Society. At a later date (1878), Sir Arthur Gordon, when High Commissioner, expressed surprise that "the Anglican Prayer Book" had been translated into Tongan and was regularly used by the Wesleyans.⁽²²⁾

It was Dr. Moulton who retranslated the Liturgy into stately Tongan to replace what the early missionaries had given with their more restricted knowledge of the language. Both versions still stand in the book used by the Free Wesleyan Church although Moulton's is the one commonly used in worship today.

Tongans eagerly adopted European music and forms of worship. They also introduced colourful patterns of their own, such as the watchnight service on new year's eve, when the lights were brought to the church by all families. In the early days these were nut-shells filled with oil.⁽²³⁾ At these services several preachers dwelt solemnly upon the passing of the old year; after about two hours the spirit of gravity was changed to a joyous welcome to the new year.

Another part of the missionaries' work was the introduction of treatment for the people's diseases. Tongans had their own treatment which, generally speaking, they have preferred, even to recent times. They were sometimes impressed, however, by the effect of the medicine brought by the missionaries and they were willing to use it if their own herbs failed. A limitation on the missionaries' efforts was the scanty knowledge they possessed. The situation was exceptional with qualified medical practitioners, R. B. Lyth, most of whose ministry was in Fiji, and George Miller. Shirley Baker, who served from 1860 onwards, had acquired a proficiency in prescribing.

An unusual case of a layman's description of what must have been poliomyelitis is found in a letter from Mrs. Matthew Wilson at Hihifo to her parents in England in November 1847. It was remarkable that one who had no medical knowledge whatever should describe symptoms so accurately. Poliomyelitis had

occasion of the presentation of shields 575
for the best village and district. Local 462
shows are also held. 543

This sense of responsibility for village 575
improvement links the function of the 462
Langa Fonua with that of the Women's 624
Health Committees in the villages, vol- 744
untary bodies whose object is to improve
the standard type of Tongan dwelling
house by building sanitary bath houses,
cooking and eating shelters and if pos-
sible tanks for water storage. Inspec- [241]
tions are carried out regularly to enforce
rules of cleanliness and to encourage
vegetable and flower gardens.

Members of the Health Committee [757] ●
help with treatment of mothers and
children for minor or skin ailments and
give advice on infant and child care,
including feeding. The Health Com- [164]
mittee works in close touch with the
visiting Child Welfare Nurse; scabies
has been reduced almost to vanishing
point.

Extensive Child Welfare Services

Child welfare has an important place 744
in the Government programme. A 743
beautifully equipped and expensive new 855
mobile Child Care Clinic with its en-
thusiastic staff of one New Zealand
Plunket-trained general and maternity
nurse with one or two Tongan student
nurses visits every village in Tonga-
tapu every fortnight for preventive care
including weighing, dieting and treat-
ment of minor ailments as well as ante-
natal cases. All pre-school children are
thus under regular observation.

The driver is an integral part of the
team, taking his share in dealing out
both liquid foods and advice or acting
as interpreter.

[P. 28-C]

/41 cont./

346 The construction of some schools and especially of many dwellings
342 built in the European "shanty style" also leave much to be desired
362 from a health standpoint (for example, uninsulated corrugated iron
roofs), there having been as yet no effective remedy.

757 The Tongans are largely indifferent to the health service. In
most cases of illness they first try self-healing with ancient Tongan
herb medicines and massage, sometimes with a small admixture of
magic, and if this does not help and the case seems very serious,
they go to the doctor. At the same time, there are a few /42/ natives
who run to the doctor with a headache or a slight stomach upset, as
well as a few who do without any kind of medical help. (92)

92. On Nomuka the author saw a woman who,
after eating a poisoned shark liver, was
very ill and, despite grave danger, did
not wish to see the assistant doctor
who lived only 300 meters away.

[743] In places where an auxiliary hospital or "dispensary" /cited in English/
is situated close by, the Tongans are beginning to come in with
minor cases (coughs, constipation, diarrhea, cuts, boils). The Tongan
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177 physicians regard the present situation as being a considerable
improvement over the condition 40 years ago. A certain change has
surely taken place in the last decades. Thus the old Tongan healing
[656] art (93)

93. Various elements of the Tongan healing
art were borrowed from the natives of
the Fiji Islands (for example, Martin,
loc. cit. II. p. 242.)

which was not always fortunate, (94)

94. A series of spontaneous attempts at
healing often took the place of a diagnosis.

was forbidden by a governmental law and was also virtually repressed
by the growing European-type health service. However, some of the

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/42 cont./

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[759]

old Tongan medicines and methods of treatment still hold their own more or less successfully in most families, and there are even Tongan doctors who apply them when pills fail. Whereas a few of the simpler herbal medicines are familiar to many Tongans and can be easily prepared if necessary, most of the remedies are known only to certain "experts" (male as well as female) who have inherited their knowledge and whom people like to consult for advice and help.

757

As examples of surviving Tongan cures we mention the following treatments. (95)

95. From Sione Matoto on Nomuka, 1952.

Some of these have lost their ancient links with the belief in spirits and magic, (96)

[113]

96. Cf. Martin, loc. cit. II. p. 240ff;
E.E.V. Collocott, "Sickness, Ghosts and
Medicine in Tonga" /cited in English/
in Polynesian Sociological Journal,
vol. XXXII, no. 3. 1923. pp. 136-142.

and are regarded simply as useful medicines, especially by younger and middle-aged natives.

1. Headache. Take six leaves of the tutu'uli and tear each leaf in half. Either the left or the right halves are used, depending on the side of the head that pains the patient. These halves, wrapped in a clean white piece of tapa are chewed and then squeezed out on the patient's eyes and nose so that the liquid runs into both eyes and nostrils. If the diagnosis has been correct, the patient will feel better in a few minutes.

2. Headache (recurring, but only at specific hours of the day).

(826)

The man (or woman) administering the treatment uses the sole of his or her left or right foot, corresponding to the aching side of the patient's head, and with it very gently touches the affected part. Then the head of the patient is massaged with uhi leaves (Evodia

/42 cont./

751 hortensia Forster var. simplicifolia [Rech.] K. Schumann).

/43/3. Toothache. You pulverize the root of the plant te'e

[824] te'e manu, wrap it in a piece of kaka 'i niu (a brown, natural bast tissue at the base of the leaf stem of the coconut palm, which envelopes the lower part of the coconut palm leaves), then place this bag in a bowl (cup) of hot or warm water, squeeze it out several times and rinse your mouth with the liquid, then spit it out.

[276] Chewing Tongan tobacco is often substituted for this treatment.

4. Earache. If a visible inflammation (pimple, boil) seems to be the cause, the person administering the treatment uses uhi leaves and "tongan oil" (its preparation p. 62). If the cause of the pain cannot be determined, he takes only Tongan oil, warms it in a small spoon over a flame and lets a few drops fall into the painful ear of the patient. Then he closes the ear opening with a piece of soft tapa or wool.

5. Inflamed eyes (red eyeballs). The leaves of heilala or fisi'uli are chewed, wrapped in a piece of white tapa, a little warm water is added and the liquid is dripped into the patient's eyes.

6. Cough. The bark of the toa tree (Casuarina equisetifolia L.) is grated, wrapped in kaka 'i niu (see no. 3). mixed with cold water and the liquid is given the patient to drink. Sometimes the bark of the fekika tree (Eugenia malaccensis L.) is used together with the bark of the tui tui tree (Aleurites moluccana [L.] Willd.) in the same manner.

7. Stomachache (colic). The bark of the ngatae tree (Erythrina variegata L. var.) and of the mohokoi tree (Cananga odorata [Lam.] Hook f. and Thomson) are pulverized, then mixed in a kaka 'i niu sheath (see no. 3) and put in a cup (bowl) of cold water which is then given the patient to drink.

/43 cont./

757

8. Diarrhea in children (common type). The grated rind of the mo'osipo root and mo'osipo leaves pounded between two stones are together wrapped in kaka 'i niu (see no. 3) and then put in cold water. The sick child is supposed to drink two mouthfuls of this liquid.

752

10. Cuts. The leaves of the ate plant are pounded between two stones, wrapped in a piece of clean tapa and squeezed out so that the liquid runs into the cut. This remedy is also tried in the case of tetanus. The leaves of the Tongan cotton plant (vavae Tonga) are used in the same way in treating wounds.

757

11. Carbuncles. The yellow leaves fallen from the 'ovava tree (Ficus obliqua Forst.) are chewed and applied to the affected part along with the saliva.

12. Filariasis. The grated rind of the pukovili tree is wrapped in kaka 'i niu (see no. 3) and put in cold water. The patient must drink this twice a day.

177

/44/ The change initiated by the European system of health care will undoubtedly become greater in the course of the next few years, especially since the coming generation, if only as a result of school training, will have more confidence than have their elders in the European medical art. But even today, with respect to their attitude toward "modern health care," the Tongans probably do not compare unfavorably with European peasants in the non-industrialized zones.

b) Care of Body, Hair Style

Care of Body

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515

Naturally, contact with the European world led to certain changes in the care of the body. The Tongan preserved his old sense of cleanliness, (97)

97. Cf. J. Cook, Beschreibung...

146
262 calories, vitamins and minerals, as do nuts and shellfish. However,
146 this balance in the average Tongan diet has recently undergone
262 significant change. Particularly since World War II, imported
178 cereal products are replacing the traditional vegetables, while
tinned varieties of meat and fish are replacing fresh sources.
146 However, survey results indicated that this dependency upon
262 imported food products is more pronounced in urban areas, especially
369 Nuku'alofa.

146 The history of Tonga, as well as the generalized South
Pacific, shows the classical forms of malnutrition to be very uncommon.
● [757] mon. Accounts of folk medicine reveal very few treatments for the
symptoms of malnutrition (Harr'e 1973, p. 86). Similarly, more
recent health and nutritional surveys, conducted by the South Pacific
Health Service during the 1950s and including those by Langley
(1952), and Whiteman (1956), did not note significant nutritional
variations between rural and urban populations. However, rapid
population expansion in conjunction with the developing of urbanization,
during the 1960s and 1970s, necessitated a reexamination of
Tonga in terms of undernourishment and classic malnutrition. Investigations
by Hansell (1962) reported that up to 15 percent of households
contacted by the Tongan Service for the Protection of Mothers
and Children evidenced some signs of protein-calorie malnutrition
(Hansell 1962, p. 288). More recently, Jansen (1973) reported that
protein-calorie malnutrition is becoming a more frequent occurrence
within Tonga, with 55 cases reported in 1971. Malnutrition was

146 rural Tongatapu. These people, displaced by overpopulation, the lack of land or through the development of cash cropping, represent a critical potential risk for the development of classical malnutrition.¹

146
164 malnutrition involves a child with diarrhea (as is common in weaning
[757] infants) being fed only warm sugar water, a folk medicine remedy.

This treatment tends to aggravate the initial condition and the cycle develops and intensifies (Tu'itavaka 1974). Subsequent manifestations of malnutrition are a lessening of the child's activity level, an increase of irritability and a retardation in the physical growth and development of the child.

125 During the investigation designed to determine the physical conditions of Tongan preschool children, height, weight, arm circumference and skinfold measures were recorded, as anthropometric

128 indicators of a child's growth and development. Data from each indicator was grouped as to rural or urban and compared to suggested standards (The Health Aspects of Food and Nutrition 1972, pp. 278-283). Percents of variation from standards were then taken and

¹The development of the symptoms of malnutrition (i.e., retarded growth and development in preschool subjects) was not strongly correlated to densely populated rural areas such as rural Ha'apai and western Tongatapu. Interview responses indicated no cases of malnutrition in these areas, which may be attributed to the greater availability of protein. The Nuku'alofa environs produced the greatest number of cases of malnutrition with Neiafu containing the second largest number. Only one case of malnutrition from the outer islands was reported. The staff of Vaiola hospital on Tongatapu believe malnutrition in Tonga is strongly linked to continued urbanization. (Interview with S. U. Tu'itavaka, Vaiola Hospital, Nuku'alofa, Tongatapu, September 24, 1974.)

(124)